

# The National Locksmith®

\$5.00

**CODES**  
Auth Electric Part 1  
H0001-H3000  
page 116

April 1997  
Volume 68, No. 4

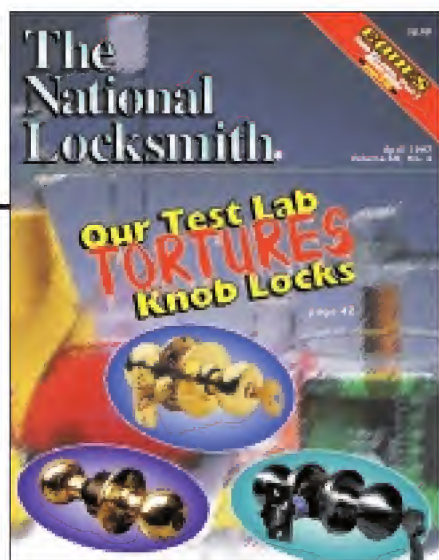
## Our Test Lab **TORTURES** Knob Locks

page 42





**On The Cover...**



After smashing and bashing a few knob locks, see if there really is a difference between Grade 1, Grade 2, and Grade 3 cylindrical locks.

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# COMMENTARY



<http://www.TheNationalLocksmith.com>  
User name: national User ID: G5fh84

## Goodbye, Jack Roberts.



**B**efore any great or important undertaking it is vital to have the proper attitude: an attitude to win, an attitude to succeed, an attitude to get to the top, an attitude to make money. Above all, have the right attitude toward your work and the people that you come into contact with each day.

I hope that the last two sentences got through to you. Let's look at them again and analyze what was said. First, just thinking about money all the time won't necessarily bring you money, but thinking about money will stimulate your other thought processes to think about **WAYS** to make money.

Second, a positive attitude is believing that what you are doing is the right thing to do and that you are going to be happy doing it. I have seen bus boys and girls, the lowest rung on the food service ladder, bus tables like it was the most important job in the world. I have seen factory floor sweeps who approached their job as though they were cleaning the floor of a hospital operating room. And I have seen stock clerks who put cans on the shelf as if they were creating a Rembrandt.

All of these people have gone on to become managers, supervisors and owners. They had a good attitude toward their work and their employers. And they did each job assignment to the very best of their abilities as they worked their way to the top.

If you left your last job, or want to leave your current one because you are not satisfied with the work or the person you are working for, perhaps you had better take a close look at your attitude before you really try to make money as a locksmith. The work that we locksmiths often have to do and the people that we often have to work for, can be far worse than anything you have encountered in the daily work place as an employee. If your dream is to be free to do as you please without being accountable to anyone, you had better try something else.

As a locksmith you will have many bosses every day. You will work for many different people and you will be free only when you lock the door and unplug the telephone. Even so, ours is a great profession. There is plenty of money to be made, and there are many benefits to be gained if you have the right attitude, have planned your work and then work your plan.

**T**he man who wrote the no-nonsense words above died recently. He was Jack Roberts, a good friend and a former writer for this magazine. I think his writing speaks for itself.

Jack was a man who had strong opinions, which he rarely kept to himself. I could count on him to call me up and tell me I was a jerk (and much worse) when he thought I needed it. But I could also count on his wisdom and humor to teach me things about locksmithing, and life.

Tragically, Jack and his wife, Evelyn, both passed away only a few days apart. They were both wonderful people. But I know this world is a better place for their time on this earth. Goodbye Jack and Evelyn. I figure right now Jack is giving St. Peter hell, and changing the locks on the gates to heaven.



*Continued on next page*

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**Marc Goldberg**  
Editor/Publisher



# COMMENTARY

*Continued from previous page*

I have been Editor of this magazine since April of 1983, exactly fourteen years. When I think about it, I cannot believe that so much time has gone by. Truthfully, the years are passing in a blur. It seems like only yesterday when I moved to Chicago from Philadelphia to take on what was a dream job for me.

Well, this is an editorial I never thought I would write. It is time for me to tell you that I am stepping aside as Editor of *The National Locksmith* magazine.

What? Is Marc leaving the National? Well, don't panic, or celebrate, quite yet. I am *not* leaving the magazine. However, I am elevating Greg Mango's job title from Managing Editor to Editor.

Yes, the National is my baby, and the editorial content of it remains a high priority. Greg is moving up in job title to Editor, but I believe this is only fair since he truly performs all the functions of Editor.

Greg has taken a good magazine and played an important role in making it a *great* magazine. Those who came before him in his role include the likes of Stan MacLean, Scott Anderson, myself, and Tom

Seroogy to whom I am ever grateful. But Greg has taken on the job of achieving editorial excellence in a tireless manner, bringing on new writers, and challenging himself every step of the way to constantly improve.

So my congratulations go to Greg, and I know he will continue to see to it that you, the subscriber of *The National Locksmith*, continue to receive the best magazine ever published for locksmiths.

I am really proud of our whole staff. Jim Darow's art direction with the help of Edgar Shindelar, Kim Fryer and Dave Krofel, has made the magazine design outstanding, and I appreciate their work as well. Jeff Adair and Debbie Schertzing as advertising sales keep the magazine healthy with ads, and that benefits you as our reader also. Tom Dean as Circulation Manager continues to build our reader base, and Sean Selby sees to it that you receive your books promptly. Finally, a fond farewell to Heather Isfan in accounting. Enjoy Arizona!

*Marc Goldberg*



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# Mango's Message

**H**ave you ever been to Disney World, had a package delivered by Federal Express, or operated Microsoft Windows? I have. So have millions of others. Walt Disney, Fred Smith, and Bill Gates are a few of the true entrepreneur visionary geniuses the world has ever known.

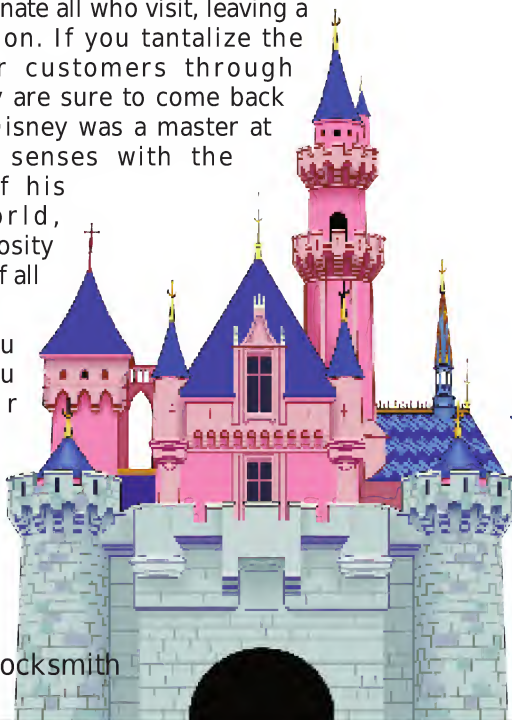
There are many factors that contribute to the success of Disney World, Federal Express and Microsoft, some of which can be learned by studying the structure of each company. By examining what made these individuals and businesses successful, you can adapt the same traits and tactics to your personal life, and your business. This does not mean you will grow to be such a giant, but it certainly can help.

## Flamboyance, Imagination and Creativeness

The visionary insight of Walt Disney is legendary. He was a master creator, planner, and designer, able to foresee and develop his flamboyant elaborate ideas. In his magic kingdom, he envisioned everything from Mickey Mouse to Magic Mountain. His imagination was a kaleidoscope of colors, and a cornucopia of creativeness. Walt Disney's eccentric vision and creative imagination is evident when visiting Disney World, giving us all a peek into his fertile mind.

By being creative, imaginative, and somewhat eccentric in your business, you create an environment unlike any others. Your business signature will eventually impregnate all who visit, leaving a lasting impression. If you tantalize the senses of your customers through imagination, they are sure to come back for more. Walt Disney was a master at tantalizing the senses with the development of his imaginary world, peaking the curiosity and imagination of all those who visited.

What do you see when you envision your business? Do you own a typical lock shop, or do you own a magic kingdom?



## The Vision of Disney, The Speed of Federal Express, and The Marketing of Microsoft

By creating an environment of unexpected imagination and proportion, you capture the attention of all who visit. There are several ways in which this can be done. It can be done with colors, sound, visual aids, unusual displays, creative layouts, animation, lighting, interactive technology, and much more. Let your imagination go wild. A little creative vision and imagination can go a long way, and make an everlasting impression. I don't know of anyone who visited Disney World that wasn't impressed.

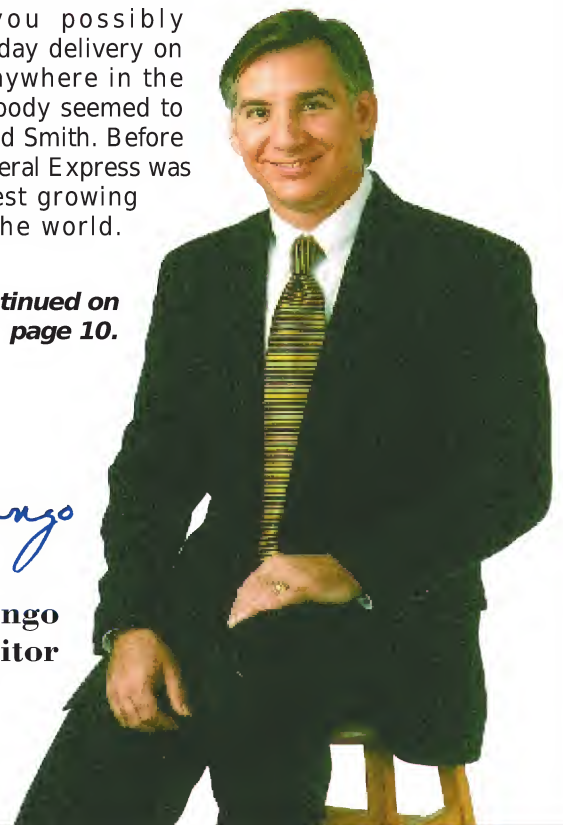
## A.S.A.P. Guaranteed

When Fred Smith started the Federal Express next day delivery guarantee, nobody could have imagined such a service. How could you possibly guarantee next day delivery on any package anywhere in the world? Well, nobody seemed to know except Fred Smith. Before you knew it, Federal Express was one of the fastest growing companies in the world.

*Continued on  
page 10.*

*Greg Mango*

**Greg Mango  
Managing Editor**





# Mango's Message

Continued from page 8

Why? Because people want service, they want it NOW. Besides the next day delivery guarantee, Federal Express was also one of the first companies to do instant package tracking. Should a package get lost (which didn't happen often) Federal Express was

able to tell the customer where it was, and when it would arrive. This service instilled a sense of confidence and competence in the Federal Express system.

Unlike the lack of confidence for most in the U.S. Postal Service. Because of

this, the Federal Express customer base grew and grew, much of which occurred because of word of mouth recommendations.

Do your customers view your service like that of Federal Express, or the U.S. Postal System?

Do you arrive at the job site when promised, or do you get lost in a black hole, never to be seen again?

In a world where time is more precious than ever, and people's patience threshold is shorter than ever, quick service responses can make the difference between you getting a job, or your competition getting the job. We have all been called to open a car, only to find that a competitor got there first (don't you hate it when that happens?)

By effective planning, and streamlining your travel routes, you can increase your response time accuracy. The quicker you can respond to a service call, the happier your customer will be, and the likelihood of a competitor beating you to the job diminishes.

## Marketing Master

An entrepreneur, a visionary, a creative genius, a programming guru. Bill Gates of Microsoft, has been hailed as all the above and then some. What Bill Gates is more than anything, is a marketing master.

Not since IBM or Nike has one company dominated such a commanding market share as Bill Gates has with Microsoft. His marketing savvy is the least focused on, but one of his greatest assets. You can have the best product in the world, but if you do not possess the marketing skills to promote it, it will soon die.

Marketing is an art in itself. Few possess the skills of a Bill Gates, but you can learn capitalizing skills that will increase your bottom line. Take advantage of every



marketing educational opportunity that you can. Read as much on the subject as possible. Many of the suggestions given really do work if they are applied and practiced. That's the key. For any marketing idea to work, it must be applied and practiced.

Marketing is one skill that escapes most locksmiths, yet it may be one of the most important. Few truly maximize their business potential through effective marketing and promotional programs. Yet, nothing can have a more profound impact on your business than effective marketing.

The ability to create a demand for a pet rock is not the result of producing a superior product. It's the result of a marketing genius applying his practice.

## Willingness to Take Risks

I was raised in a family that was very conservative. I was not taught to take risks. I was taught to play-it-safe, avoid the unknown, and stay within the confines of a given path. I was not allowed to be reckless, encouraged to explore the unfamiliar, or provoked to blaze a trail of my own. Although this was very sound advice given with the best of intentions, it was not until several years later that I realized that playing-it-safe, was a detrimental ingredient to success.

Without the willingness to take risks, you are destined to forever be confined within the trappings of your own mind. Disney, Federal Express, and Microsoft would not have achieved the phenomenal success they enjoy, had they based their decisions on play-it-safe mentality. Most truly successful businesses operate with a controlled recklessness, eager to explore uncharted territory, setting a standard for others to follow.

## A Tenacious Hunger for More

When is enough, enough? Is there ever enough? If you ask that question to an individual that you would deem successful, he or she would tell you that there is never enough. Some individuals would consider that attitude greedy, while others consider it necessary for success.

Those who are truly successful, never feel as though they have enough. Ask Michael Eisner (current President and CEO of Disney) Fred Smith of Federal Express or Bill Gates of Microsoft — declared the wealthiest man in the world — whether they have enough. Many may think they do, and most would probably be utterly content to have just a portion of their net worth. Some may even wonder how they could possibly want, or need, more! Yet, day after day those same individuals are searching for ways to attain more, to do more, and to accomplish more. It's that tenacious hunger, and insatiable appetite for more, that attributes to their success.

By applying some of the suggestions given, while studying and emulating the practices of those proven successful, you are sure to reap the rewards. Life, growth, and success are continuing education processes. It never ends. As long as you are willing to continue the education, you will prevail. **TRU**



A P R I L 1 9 9 7

# Letters

*The National Locksmith* is interested in your view. We do reserve the right to edit for clarity and length.

## Use Better Judgment and Tact

This letter is in reply to "Roadside Skirmish" in the January 1997 issue, page 10.

Come on now, Mr. Huff! It seems to me that you flew off the (car) handle a bit too quickly refusing to do further work with Chevrolet Roadside. In your letter, it sounds like this was the first problem you had ever encountered with them. I'm sure this bill could have been settled differently without you first writing to refuse any more work from them. It is no wonder that Pontiac refused to do business with you... I can't blame them!

I have had the pleasure of working with the Roadside Network Center along with Chevrolet, Pontiac and Oldsmobile Roadside Centers for some time now, and I have never had a bad experience with them. I HAD to write to tell you, Mr. Huff, that EVERYONE I have ever dealt with acted and performed their duties professionally and pleasantly.

Just think Mr. Huff, if half the people you serviced through Roadside called you directly without their key codes, your job would be more involved. These fine people at the Roadside Network Centers are there to offer a wonderful service to their customers. In doing so, customers are confident in getting service from a professional group of locksmiths who profit too.

They don't work for you Mr. Huff,  
YOU work for them. *Tom Lynch  
Connecticut*

## Don't Single Out A Whole Country

I just wanted to write to say that I read, and often re-read your magazine with great interest every month. I never fail to learn something new with each issue. Recently I had the occasion to phone your subscription department as I had somehow subscribed twice for the same year. The gentleman that took my call had excellent telephone manners and solved my problem almost instantly.

I have just read the January '97 issue and I was quite disturbed by Mango's Message "Stealthy Stealing and Surreptitious Eavesdropping." He states in part of his message, "Other area code numbers to be cautious of is: 604; 250; 403; 306; 204; 807; 705; 905; 416; 613; 819; 418; 514; 506; 709 and 902". These area codes are every area code in Canada except 519 South Western Ontario which is where I live.

Does this mean that 94% of Canadian callers to the United States are likely to be scam artists or are conducting some kind of rip off? What happens to business and trade



with companies in these area codes? Look in your Distributor Digest section and annual directory issue and there are several of these area codes. I wonder if these companies read Mango's Message?

Please don't single out a whole country because of some other crooks in the British Virgin Islands.

You have an excellent product and help many people in this industry, but this may put many readers off.

*Dan DeSutter  
Canada*

**Editors Note:** The area code numbers given are numbers in which there has been alleged fraudulent (scam) activity reported. The numbers listed were gathered from on-line sources, and was in no way an attempt to blackball any one area, city, state, county or country. The purpose of the editorial was to inform those unaware of such activity. Every example given — and then some — has and does occur.

As an update to "Stealthy Stealing and Surreptitious Eavesdropping" the off shore British Virgin Island 809 area code is in the

**The National Locksmith**  
1533 Burgundy Parkway  
Streamwood, IL 60107  
Attn: Editor



**Continued from page 12**

process of breaking up into even more fragments. The new numbers the swindlers will be trying to lure you to is: 242, 246, 264, 268, 284, 345, 441, 473, 664, 758, 767, 784, 787, 868, 869, 876, 809.

If a legitimate business is operating in any of the area code locations given, this list will have absolutely no effect on its business. If you are a legitimate business operator, you want nothing more than to expose those that are not, and make the public aware that such operations exist. It can only increase ones credibility.

As to whether "these companies read Mango's Message?" Of course they do! Who doesn't? Oh, don't get your dander up, I'm just kidding.

- Greg Mango, Managing Editor

## More Than Just A Magazine

Thank you for the e-mail service you offer! I have been a one man locksmith business for a little over five years now and the one thing I learned early on is the fact that *The National Locksmith* is the BEST tool any locksmith can have. *The National Locksmith* has been at my side since the beginning and my subscription runs well into the twenty-first century.

A magazine is a magazine, without the professional touch of many gifted individuals. *The National Locksmith* takes locksmiths well beyond just a magazine. I wish I could mention the names of all the knowledgeable staff and contributing authors that have helped me to better my career, but to forget one name would be an injustice.

I have learned to trust the judgments of the staff when it comes to new product reviews. Without knowing first hand how a particular tool or machine holds up under heavy use could cause a locksmith to waste good money. I haven't gone wrong yet.

Your publication runs like a well oiled machine; however, I must admit, I do have one complaint. I only receive your publication once a month!

Keep up the GREAT work! A subscriber for life. *The Yankey Locksmith*  
New York

## An Eye For An Eye

A woman hit my van the other day. There wasn't much damage which is probably why she came into the hardware store that I was in to look for the owner. She probably thought that I would dismiss the small damage and not make an issue of it. She was wrong. This is my baby. It has never let me down in the eight years that I have had it, and anyone that hits it, hits me, and I told her so.

The estimate of repair was \$125 and I gave her and her husband the bill hoping, but not expecting them to pay it. I am still waiting for payment after the husband told me he didn't have the money now, but he would send me something in a few weeks. Sure he will, and the Pope is not Catholic.

The point is, how many times have we as locksmiths made a mistake in our work for a customer and had to pay for damages? And how many times have people done damage to us and did not pay, no matter what action we took?

Seems to me that we should re-evaluate our position and not rush to pay for accidental damage to a customer's property. Make them suffer a little like they do us.

Bob Galcik  
Pennsylvania

**Editors Note: I can understand your frustration Bob, but I don't believe we can — or should — encourage others to renege responsibility to — as you put it — "Make them suffer."**

**I think kidnapping their first born child would be a little more humane. Don't you?**  
- Greg Mango, Managing Editor

## Pleasure Doing Business

I was called out the other day to open some file cabinets. Four of the cabinets were Steelcase with Chicago locks. The fifth was a Hon file cabinet. It had 140e stamped on the lock. None of my code books had codes for Hon file cabinets. So I called the 800 number that was on the side of the drawer. These people couldn't have been nicer. When I asked for a code for the lock, the lady said not to bother that she would send me out keys for the lock free of charge! She gave me her name and a

confirmation number as well! It sure is nice to deal with a company like this. If anybody needs the number, it's 1-800-336-8398.

Tim McBeth  
E-mail

## More For Me

I've read where other lock services have become disenchanted with Chevy roadside, which along with Pontiac make up the RNC. If you're lucky enough to become part of the RNC, they pay \$40 (single side) and \$48 (double side) to deliver a key within 5 miles of your shop. Add \$1.50 per mile over 5 miles and you have a pretty decent bit of change, given the fact that they dispatch you with a code. The call center operators are always courteous and seem to enjoy helping you.

RNC tells you right up front that payment will be 45 or 60 days which doesn't really matter. It's money in the bank. Magically one day that money will show up in your mailbox. Those who complain and refuse the work pending payment, are refused codes, and get what they deserve. Brings to mind the cutting off of the nose story.

Those who can't wait for the money, and lose their rights to receive codes, good luck to you and thanks for reducing the wait time on my cell phone.

Acankey  
E-Mail

## Flat Rate Is Your Rate

I would like to put in a plug in for *The National Locksmith*. They make a real fine Flat Rate Manual for determining your price on most everything. I got one and sat down with it, within an hour I had everything figured out as to what to charge.

For me, everything is based on \$30 per hour. I am charging more than one doctor in town, but less than the other, so go figure. Today I had three cars to make keys for. Prices were all based on the Flat Rate Manual. I am cheaper than some, but higher than others. The flat rate manual for me was well worth the money.

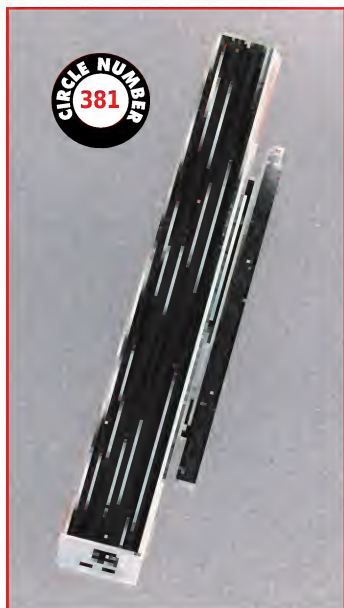
John Hornung  
E-mail

**TRL**



# SECURITY CAFÉ

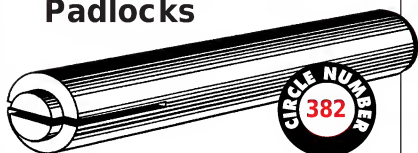
## LCN Introduces Electrically Powered Door Operator



LCN's most recent introduction is the electrically powered Auto-Equalizer, an automatic operator that opens interior and exterior doors at the touch of a button. The new electric Auto-Equalizer has a unique "break away" function which protects the operator, door and frame if vandals try to force the door "closed" while in the "opening" phase. Another special feature is the "second chance". If the door meets any resistance during the opening swing, the electric Auto-Equalizer pauses for a few seconds then tries again to open the door slowly and safely.

The LCN electric Auto-Equalizer has a sophisticated "soft-start" motor control that gradually applies the voltage to the motor over a 1/4 to a 1/2 second period which greatly extends the service life of all drive components.

## New Keying Tool For Master "Up" Padlocks



Major Manufacturing has recently introduced a new keying tool for Master Lock "UP" series of uncoded padlocks called the MKP-1. The MKP-1 is easy to use by simply inserting the key in the uncoded Master "UP" lock, placing the MKP-1 keying tool over the key and tapping with a hammer until the cylinder pins shear. That's all there is to it.

## American Lock Expands Safety Lock-out Family

American Lock Company is introducing the new Verton® padlocks, a series of structural composite locks

additional safety lock-out option wherever price, strength, durability and corrosion resistance are important.

## PRO-LOK = Simple Solutions For 1997 Auto Lockouts

PRO-LOK's new 1997 Car Opening Update is delighting auto lockout specialists. The unique MACBUP97 UPDATE "All-On-1" format concentrates on specific opening details, color photographs and related technical data; devoting one page to each new vehicle. Almost any technician will open the



announces the AO56 DELUXE ZIPPERED CASE a heavy-duty tool case, \*(tools not included) and two new entry tools - AO44 CAMRY/LEXUS TOOL for '97 Camry & Lexus LS400 and AO45 LOOP-D-LOOP for late model Mercedes, Volvo and BMW sedans.

## JLM Wholesale Stocking Securiton



JLM is now stocking the full line of Securiton products, featuring Magnalock and Magnalock Hardware, Power Supplies and Monitors, including the BPS Series and the PSM Series. Also available are an array of Exit Devices such as the Touch Sense Bar and Touch Sense Plate, which do not have moving parts but release the lock by sensing human touch electronically.

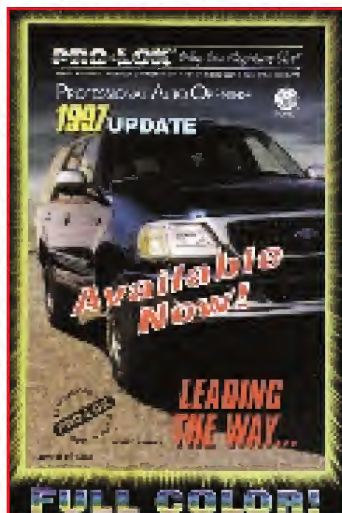
JLM is stocking Securiton Entry Devices including the DK-26 Digital Entry System, the DK-16 Digital Entry System and the Standalone Digital Entry DK-II as well as MK Series Keyswitches. Also in stock are Security Timers, including Exit Delay Timers, Door Prop Alarms, TimeMaster and Prime Time. Relay Boards, Pulse

# Security Café

**DROP IN FOR TOOLS, TECHNOLOGY & EQUIPMENT**



newest cars quicker by referencing this information. The company also





Continued from page 16

Extension Timers and Relay Logic Packs.

## Aiphone Chime Com2, The 21st Century Doorbell



CIRCLE NUMBER  
386

The Aiphone Chime Com2 makes the ordinary doorbell or chime old-fashioned. For a little more cost, it provides a chime plus the convenience and security of a door answering intercom. A caller presses the door station button, and is announced by a pleasant two-stroke electronic chime. The door can be answered or monitored from one or two inside room stations.

It's easy to install, with the same two wires as a doorbell or chime, the Chime Com2 Set includes a room station and a door station with illuminated call button. The additional room station is available separately (CC-IM).

## Streamlight Topspot® 2 Convertible

CIRCLE NUMBER  
387

The TopSpot® 2, from Streamlight, Inc. is a convertible flashlight/headlamp making it a versatile instrument for a variety of applications.

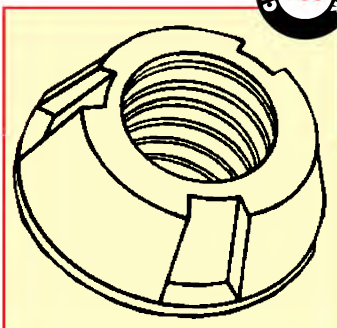
As a hand-held flashlight, the TopSpot 2, features a textured grip that allows secure handling. As a headlamp — providing hands-free lighting — the polyfoam padded lining and adjustable elastic band offer balanced comfort when worn around the head.

The TopSpot 2, combines shock-resistant polymer

construction, light weight (7.9 ounces with four AA batteries) and a powerful spot-to-flood beam (3-7 times brighter than other headlamps), making it ideal for campers, hunters, professionals and do it yourselfers who need a flashlight when their hands are busy elsewhere.

## Tanner Bolt & Nut Corporation Expands Trident™ Line

CIRCLE NUMBER  
388



Tanner Bolt & Nut Corporation is now offering an expanded selection of Trident™ tamper-resistant nuts. The Trident™ Nut is an easy to install, corrosion and tamper-resistant nut that can be used with bolts, machine screws, threaded rod and masonry anchors.

Now available in thread sizes #10-24, 1/4"-20, 5/16"-18, 3/8"-16, 1/2"-13, 6mm, 8mm, and 10mm. A Trident™ Socket tool is required for installation.

It is now being used in correctional institutions, schools, hospitals and public and private facilities. Some applications include securing inmate furniture, electrical equipment, computers, traffic signs, park benches, outdoor play equipment and consumer product displays.

## Continuous Hinge By Stanley

The Stanley Commercial Hardware continuous pinned hinge (600 Series) is a natural choice for installation where heavy doors are required or



CIRCLE NUMBER  
389

in situations where doors and frames may be subject to constant battering by people and equipment. Available in steel and stainless steel, the 600 series is UL listed for three hour openings and comes with a lifetime warranty. The series has also received the highest fire rating available.

Commercial, industrial, restaurants and multiple housing facilities are typical high abuse sites where continuous hinges are highly appropriate for initial or replacement installations. The 600 series is available in 7' to 10' lengths and installs easily into existing openings.

## Vindicator Announces Release Of Microlock™ 40

CIRCLE NUMBER  
390

Vindicator announces the release of the newest member of the MicroLock family—the MicroLock 40. Like all MicroLock products, the Vindicator MicroLock 40 is a combo-key (combination plus electronic MicroKey™) electronic safe lock. The major distinction of this product is its ability to provide multi-door control for multiple uses while maintaining a complete audit trail of all safe activity.

The Vindicator MicroLock 40 is simple to retrofit. Using

the existing mounting holes of traditional mechanical combination locks, the MicroLock 40 can be retrofitted on most safes within minutes.

## Jet Introduces Ford Keys

CIRCLE NUMBER  
391

Jet Hardware has introduced four Ford key blanks. The officially licensed keys are for the 1995-1996 Ford Contour and Mercury Mystique (H71F-NP), 1996 Ford 8-cut (H75F-NP), 1996-1997 Ford Escort and Mercury Tracer (H76F-NP) and 1996 Ford Contour and Mercury Mystique (H78F-NP).

## A Vehicle Alarm That Will Drive Thieves Crazy



CIRCLE NUMBER  
392

Now there is a motion-sensitive vehicle alarm that emits an ear splitting 130 decibel noise level (about 10 decibels louder than a small jet plane taking off) INSIDE your vehicle when a thief attempts to enter your vehicle. The new SECURER WIRELESS VEHICLE ALARM can help stop the theft of your vehicle and/or tape deck and help you maintain harmony with your neighbors.

The Secure® alarm is cassette shaped and fits into the cassette slot of standard tape decks. The alarm has a patented deadbolt lock feature which is engaged when the alarm is turned on with a key. Attempting to remove the alarm without releasing the deadbolt lock will damage the tape deck rendering it useless and unsellable. **TNL**





# After-Market AIR BAGS

by Steve Young

Earlier this year, the Midas Muffler Shops in the North Florida area began installing a new after-market air bag system on older vehicles. The system is referred to as the "SRS-40 Supplemental Restraint System", and is manufactured by Breed Technologies of Lakeland, FL. The test marketing program was deemed a success, and now the program is being expanded nation-wide. Expect to see television and print ads announcing "Operation Air Bag" in your area soon.

When I first learned of these new air bags, I contacted the Midas corporate offices and they put me in touch with Breed Technologies. Several phone calls later, it became apparent that the official policy of both Midas and Breed Technologies was that the SRS-40 system should be serviced ONLY by factory trained Midas technicians. In a very tersely

worded fax from Breed technologies, I was informed that any locksmith who removed an SRS-40 air bag would void the warranty. When asked about what provisions, if any, would be made for locksmiths or emergency road service involving steering column locks, it was obvious that the idea had never occurred to them.

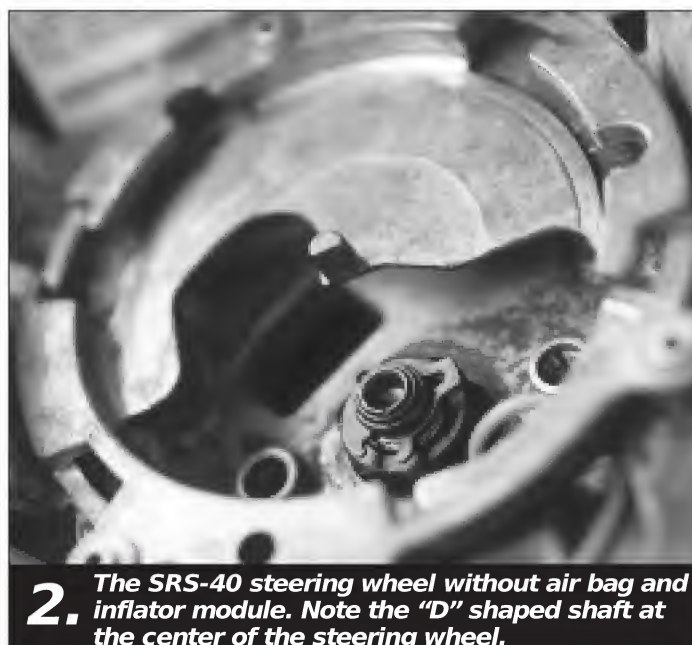
I can't explain why Breed technologies believes that they can limit servicing of these devices to their personnel, while General Motors can not do the same for their air bag systems. Long ago, the courts guaranteed the consumer the right to service their own vehicle, or to have their vehicle serviced at the service facility of their choice. It is illegal to require service work to be done by a particular establishment in order to maintain a warranty. As long as the

work is done according to the manufacturers recommendations, anyone can service the vehicle. In my opinion, this means that Midas cannot legally require owners of the SRS-40 system to have all steering column work done by a Midas technician.

However, this does not mean that anyone should attempt to remove this air bag steering wheel without taking the proper precautions, or without a full understanding of what they are getting into. This air bag system is very different from the GM, Ford and Chrysler air bag systems that have been in use for the last nine to ten years. There is a definite possibility of an accidental deployment and or serious personal injury if this device is not handled properly. I tried to get



**1.** The SRS-40 air bag system as installed on a 1990 Chevrolet S-10 Blazer.



**2.** The SRS-40 steering wheel without air bag and inflator module. Note the "D" shaped shaft at the center of the steering wheel.





**3.** The Inflator module as seen from the rear. Note the socket on the back of the module to accept the 'D' shaped shaft.

both Midas and Breed Technologies to provide the necessary information for this article but both declined to make that information available. For that reason, let me make it clear that this article was written without the approval or consent of either Midas or Breed Technologies. I wrote this article in the hopes of preventing unnecessary injuries. It is my opinion that a failure to inform locksmiths about this steering column is much more likely to result in injuries than simply explaining the situation.

In order to get the information to assemble this article, I had one of these air bags installed on my personal vehicle, a 1990 Chevrolet S-10 Blazer. The folks at the Midas shop where I had the work done were kind enough to let me watch and photograph the process, and to give me some of the technical information. The purchase price for the air bag, including installation was \$329.00. I have been told that the original price for this system when it was first introduced was around \$600. At this new lower price, I suspect that there will be a lot of these systems on the road soon.

The SRS-40 system consists of three main components: a new steering wheel, the air bag itself, and the inflator module. The inflator module is the heart of the system. It contains both the mechanical triggering mechanism and the

generant that produces the nitrogen gas to deploy the air bag.

Let's take a few moments to take an in-depth look at the components of the SRS-40 air bag system. Once we are familiar with the components, we can go into the disassembly and reassembly procedures.

### **The Steering Wheel**

The Steering wheel is an integral part of the SRS-40 system. It not only provides a support for the air bag, but also acts as a heat sink to draw the heat from the inflator module away from the driver and dissipate it. In addition, the horn buttons are

mounted onto the steering wheel under a thin spot in the plastic covering of the air bag.

The SRS-40 steering wheel used on my Blazer is 14 3/4 inches in diameter, which is one inch smaller than the steering wheel that came with the vehicle (*see Photograph 1*). The hub of the wheel is die cast and appears to be made of an aluminum alloy. At the center of the wheel is the splined receptacle that fits onto the steering shaft. The cavity that the inflator module fits into is offset from the center of the steering wheel, but is centered in the area occupied by the air bag.



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The center of the steering wheel contains the mounting fixture for the inflator module. In the center of the mounting area is a flange that is fitted with a "D" shaped shaft that extends upward toward the driver (*see Photograph 2*). This shaft is extremely important. The shaft seats into a recessed socket on the base of the inflator module (*see Photograph 3*). As the inflator module is installed, this shaft turns a mechanism inside the module that arms the device. If the shaft is damaged, the air bag will not function properly. Take care at all times to avoid damaging this shaft.

#### **The Inflator Module**

The inflator module consists of five major parts, all housed in a machined aluminum housing (*see Photograph 4*). **NEVER** attempt to open, drill into, or otherwise tamper with the inflator module. Treat the inflator module as carefully as you would a live hand grenade. The inflator module can be thought of as a small self-contained bomb.



**4.** The inflator module removed from the steering wheel.

The five components inside the inflator module are: the triggering device, the detonator, the generant, the barrier foil and the filter screen. Of these components, only the filter screen is visible from the outside of the unit. **NEVER** tamper with, touch or otherwise disturb this filter screen. Damage to the filter screen can cause the air bag to fail or malfunction.

The triggering device is all mechanical. Unlike most air bags, the SRS-40 does not require electricity to deploy the air bag. The mechanical trigger is designed to measure the force of an impact. When a sufficient impact is detected, the trigger will fire the detonator, which in turn, will ignite the generant. You can think of

the detonator as being similar to the primer in a pistol cartridge, and the generant as the powder charge. However, instead of driving a bullet, the explosive energies developed by the inflator module are channeled into inflating the air bag.

The generant is a chemical compound that burns very rapidly, producing a large quantity of Nitrogen gas. The Nitrogen gas that is developed is colorless and non-toxic. The generant used in the SRS-40 is classed as a type nine incendiary device and contains Sodium Azide. Although the Nitrogen gas is harmless, Sodium Azide is extremely poisonous and should be treated with the utmost respect.

The barrier foil is sealed around the generant in much the same way as the modern foil packaging that is used with "vacuum packed" coffee. The barrier foil provides an air tight, water tight container around the generant. This is critical because if they were exposed, the chemicals in the generant would absorb moisture from the air. Not only would this prevent the air bag from functioning, but the chemical reaction of the Sodium Azide with the moisture in the air is itself hazardous.

When the generant is ignited, the Nitrogen gas ruptures the barrier foil and flows through the filter screen and into the air bag. The filter screen prevents burning pieces of the generant from entering the air bag. The blast of Nitrogen gas created by the burning generant is directed into the air bag by way of a series of holes around the rim of the inflator module

(*see Photograph 5*). The filter screen is visible through these holes.

Because the trigger mechanism is self contained, all mechanical, and does not require any electricity, it is very easy to install. However, it can also trigger the air bag even if the ignition of the car is turned off, or if the device itself is shocked sufficiently. This means that it would be theoretically possible to trigger the inflator module by dropping it. To prevent this, a mechanical safety is incorporated into the design of the module. The safety automatically engages whenever the module is removed from the steering wheel.

Proper handling of the unit is still extremely important when servicing these air bag units. You can think of the arming operation of the inflator module as being similar to cocking the hammer of a gun and releasing the safety. Once the device is armed, it should be handled with the same type of caution and respect that you would use when handling a loaded gun. *You should wear flame-retardant leather gloves and safety glasses whenever you handle the inflator module.* In addition, keep your fingers as far away as possible from the vents around the rim of the module. If the module were to detonate, streams of extremely hot gas would shoot out of these vents.

#### **The Air Bag**

The air bag portion of the system seats tightly over the top of the inflator module. The vents in the inflator module are aligned so that the blast of hot Nitrogen gas generated by the inflator module will be directed into

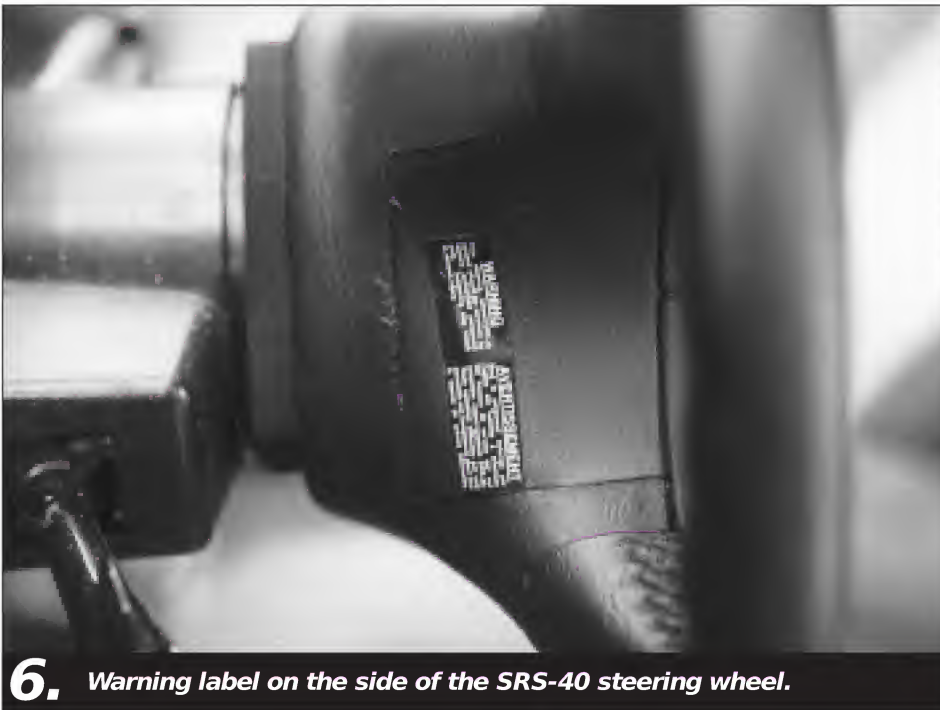
the air bag. The air bag itself is folded tightly just beneath the plastic outside cover of the unit. **NEVER** tamper with the air bag itself, or the seal which fits around the inflator module. Damaging either component could cause the air bag to malfunction.

The nitrogen gas developed by the inflator module is channeled into the air bag. As the air bag expands, it rips open the plastic



**5.** The vents in the top of the inflator module. Note that the filter screen is visible through the vents.





**6.** *Warning label on the side of the SRS-40 steering wheel.*

cover in the center of the steering wheel and blossoms into a balloon-like cushion designed to protect the driver from injury. As soon as the air bag is fully deployed it begins to deflate. Within a few seconds, the air bag is completely deflated and hangs limply from the center of the steering wheel.

The heat generated by the deployment of the air bag is drawn away from the driver by the heat-sink which is built into the steering wheel.

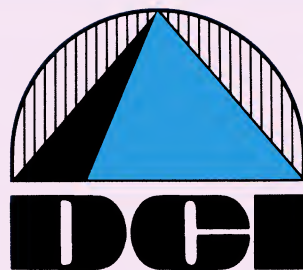
#### **Identifying the SRS-40 Air Bag**

The first step in servicing this

column is to recognize the fact that you are dealing with an SRS-40 air bag system. This is not very difficult to do because "SRS-40" is embossed into the plastic cover of the air bag. In addition, there are six warning labels in various locations on the car. The first that you may see is a small label on the side of the steering wheel itself (see *Photograph 6*). Other labels are attached to the Vehicle Identification Number (V.I.N.) plate at the bottom of the windshield, the sun visor, under the hood near the battery and inside the glove box.

#### **Inform the Customer**

Once you have determined that you are dealing with an SRS-40 system, you need to inform your customer of the situation. You need to explain why the steering wheel has to be removed, and why this air bag is different from an O.E.M. (Original Equipment Manufacturer) air bag. You should also explain to them that Midas and Breed Technologies have failed to make servicing information available for technicians like yourself. You should also provide the customer with the phone numbers for both the customer relations departments of Midas and Breed Technologies so



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they can have the work done by Midas if possible. Midas Consumer Relations Department: (800) 621-8380 or (800) 438-8600. Breed Technologies: (800) 997-7740 (8:00 - 5:00 Eastern Standard Time, Monday - Friday).

Only after the customer has been properly informed of the options available, should you proceed with the job. As you inform your customer, be sure that they understand that removing the steering wheel is a normal part of automotive maintenance. Explain to them that on many vehicles the lock, turn signal

switch, emergency flasher switch and cruise control switch *cannot* be serviced without removing the steering wheel.

### **Removing the Air Bag**

After you have informed the customer and agreed to do the job you are ready to begin the removal of the air bag. Since the SRS-40 air bag is not electronically controlled, there is no need to disconnect the battery. However, depending on the type of vehicle that the air bag is installed on, you may need to disconnect the battery in accordance with the vehicle

manufactures recommendations for steering column service.

The first step in removing the air bag is to carefully pry the two plastic covers free of the sides of the steering wheel. Once these are removed, you will be able to see two 10mm bolts on each side of the steering wheel (see *Photograph 7*). Remove all four of these bolts to release the air bag. After the bolts have been removed, gently pull the air bag free of the inflator module by rocking it from side to side as you pull it upward. Once the air bag is free of the inflator module, store it in a safe place while you do the rest of the job (see *Photograph 8*). *Never tamper with the air bag itself or the seal that fits around the inflator module.*

Once the air bag has been removed, you will be able to see the inflator module and the mounting screws that secure it to the steering wheel. If you look at the outside of the inflator module like a clock face, (with the steering wheel turned to the straight ahead position) the top of the steering wheel would be in the 12:00 position. At the 5:00 position and the 9:00 position are two Phillips head screws (see *Photograph 9*).



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**7** Two of the four 10mm bolts that secure the air bag to the steering wheel.

The two screws hold the inflator module in place at the center of the steering wheel. In addition to the screws, the inflator module has a flange that engages into the main casting at the center of the steering wheel. In order to remove the inflator module, both screws must be removed before the module can be rotated counter-clockwise to disengage the flange.

At the 1:00 position on the inflator module is a black plastic tab that protrudes from beneath the inflator module. This black plastic tab acts as a safety lock, and must be retracted before the module can be rotated.

While wearing safety glasses and flame-retardant leather gloves, remove both of the screws. After the screws have been removed, gently pull the plastic tab toward the outside of the steering wheel until it stops (see Photograph 10). Carefully rotate the inflator module counter-clockwise by hand until it stops turning. At this point, the firing mechanism has been placed into a "safe" mode. (However, do not assume that the unit has been disarmed, continue to treat it as if it were a live hand grenade.)

Carefully pull straight up on the inflator module in order to pull it free of the steering wheel. As you pull the module up, take care that you do not bend or break the shaft that fits into the "D" shaped socket on the back of the inflator module (see Photograph 3). As the module is rotated around this shaft, the arming mechanism inside is moved from the "armed" position to the "disarmed" position. **CAUTION: If this shaft becomes bent or damaged, it may cause the air bag to malfunction.** Once the inflator module has been removed, store it in a safe place while you do the rest of the job. Make absolutely certain that you **DO**



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**8.** The air bag after it has been removed from the steering wheel.

**NOT** under any circumstances, drop the inflator module.

The steering wheel itself can now be removed. The electrical connection between the horn buttons and the cars electrical system will vary according to the vehicle that the SRS-40 system is installed on. After the horn has been disconnected, the steering wheel can be removed in the normal fashion. The body of the steering wheel is drilled and tapped for the same size puller bolts that General Motors uses. The holes for the puller bolts are not drilled all the way through the body of the steering wheel, so over-tightening the bolts could conceivably strip out the threads.

### Replacing the Air Bag

To reassemble the steering column, replace the steering wheel and torque the nut down to the car manufacturers specifications. Reconnect the horn buttons and make sure that all of the wiring is safely

tucked away from the inflator module.

While wearing safety glasses and flame-retardant leather gloves, replace the inflator module back into its mounting flange on the steering wheel. Make sure that the "D" shaped shaft aligns properly with the socket



**9.** The inflator module installed in the steering wheel. Note the two Phillips head screws that secure the module to the wheel.



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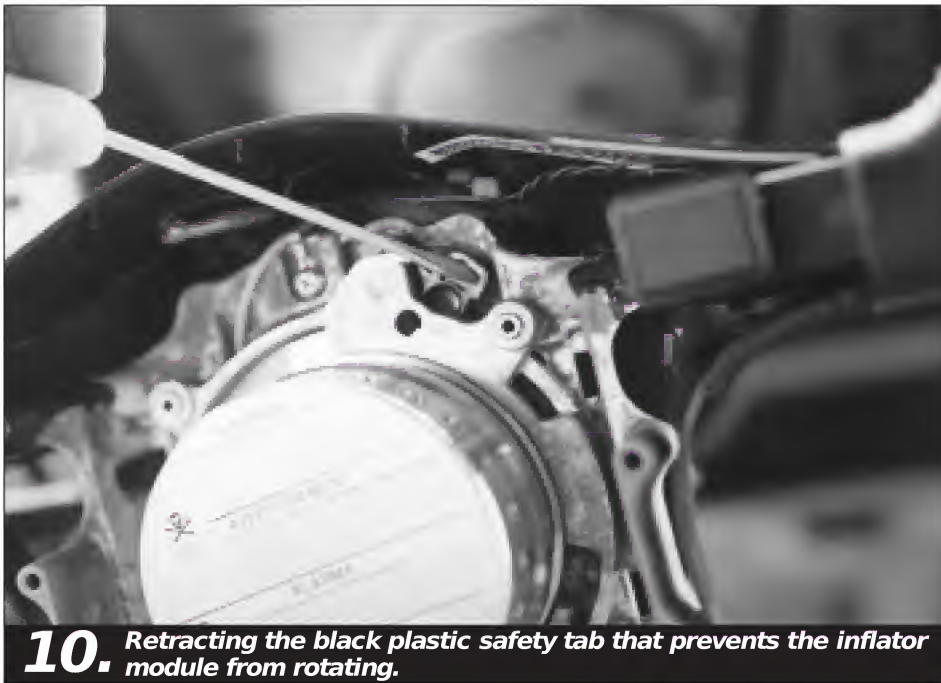
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**10.** Retracting the black plastic safety tab that prevents the inflator module from rotating.

on the rear of the module. Once the module is seated into the wheel, rotate it clockwise until the plastic tab snaps into place. Replace the two Phillips head screws in order to secure the inflator module.

Carefully slip the open end of the air bag over the top of the inflator

module and seat the air bag back onto the steering wheel. While pressing the air bag assembly down onto the steering wheel, insert the four 10mm bolts back into the sides of the air bag. Tighten all four bolts by hand until they are all snug. These four bolts must be tightened to a torque specification of 7 - 9 foot-pounds. Take

care that you do not over-tighten these bolts in order to prevent stripping out the threads in the steering wheel. After the four bolts have been replaced, all that remains to be done is to replace the plastic cover plates on the sides of the steering wheel.

It remains to be seen if these after-market air bags will be accepted by consumers in general. But, if the conversations that I have had with various people are any indication, there could be a reasonable market for these devices in the near future.

The biggest problem facing locksmiths is to be able to properly identify these air bags and inform the customer prior to arriving at the job site. These problems will become much worse once cars that are equipped with these systems change hands, and the new owner may be totally unaware that the car is equipped with an after-market air bag.

Hopefully, the folks at Midas and Breed Technologies will soon realize the services that locksmiths can perform for them, and will make service information more easily available. **TNL**

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# SERVICING

## The 1994 Toyota Camry



by  
**Michael Hyde**

**T**he 1994 Toyota Camry is one of Toyota's best selling cars, as most Camry's have been in the past (see Photograph 1).

Because the lock linkage rod is out of normal view, when trying to reach this rod follow the inside release linkage forward and then pull up to engage the lock/unlock linkage rod where it is not covered by the plastic shielding



**The 1994 Toyota Camry.**

(see Photograph 2). The use of a good bright car opening light is a must, I use the super bright car opening light from Jiffy, Model AL3900, it uses a 9.6 Makita rechargeable battery and is sold through Pro-Lok.



**Finding the open spot of lock linkage is tricky but not impossible.**



**Lock with rubber ring and plastic bezel removed.**

### Ignition Lock

The ignition lock is located in the dash and has a large rubber ring that encircles the cylinder. The rubber ring and plastic bezel just snap off exposing the lock (see Photograph 3). Now stop and disconnect the battery before proceeding.





**The ignition housing is clearly seen from under the dash area. But, it is not necessary to remove the cylinder from this position.**

Photograph 4, is a view from under the dash showing the bottom of the ignition cylinder housing where the ignition cylinder retainer is located. It is not necessary to depress the cylinder retainer from this position, I show it as a point of reference.

**T**o remove the cylinder, first put the key in the ignition and turn it to the ACC or accessory position. Depress the retainer by inserting a long narrow probe with a small 90° L-shaped hook on



**Use an L-shaped probe to reach the cylinder retaining button and remove the ignition cylinder from the housing.**

the end to reach in through the cylinder hole opening in the dash, and depress the retainer on the bottom side of the ignition housing (see Photograph 5).

The ignition face cap is held to the cylinder housing with a retaining pin and two staked posts. To remove the pin, drill



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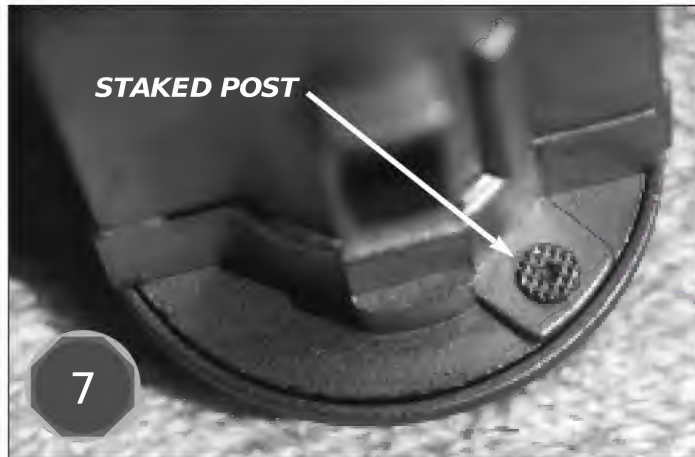




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**Drill and pry out this face cap retaining pin.**



**One of two staked posts that hold the face cap to the lock.**



**These vehicles utilize the Toyota split wafer system.**



**The door lock is integrated into the handle.**

a small hole next to the pin and pry it out with a pin punch (see Photograph 6).

Use a tru-arc ring spreader to remove the plug retaining ring from the rear of the ignition cylinder plug. Place the

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**Start by removing the door latch release trim. Gently remove the bottom side first and then the top. This part breaks easily.**

ignition cylinder housing in a vise with the face pointing downward and make it snug, but do not over tighten. There are two pot-metal posts that stick out of the ignition face-cap and through the cylinder housing that were staked in place at the factory (see Photograph 7).

I have found that consistent, light blows to each post in succession will allow the posts to travel back through the cylinder housing without damage. If you are heavy handed, take your time to avoid breaking the posts.

These Toyota's use the new split tumblers mixed in with solid wafer-type tumblers. These split tumblers are always the same depth as it's opposing split tumbler, since they ride on the same landing (see Photograph 8). I personally believe this is a bad design flaw, because as the edge of the key wears, the landing will become smaller, thus the split tumblers will start to bind and not ride at their correct height.

After you code the cylinder, place the cylinder face-cap in the face down position on a non-marring surface and gently push the housing back onto the face-cap, it may be necessary to gently tap in place. Now that the face-cap is seated onto the cylinder housing, you can re-stake the face cap posts.

## Door Lock

The door lock cylinders on the Camry are integrated into the handle assembly (see Photograph 9).

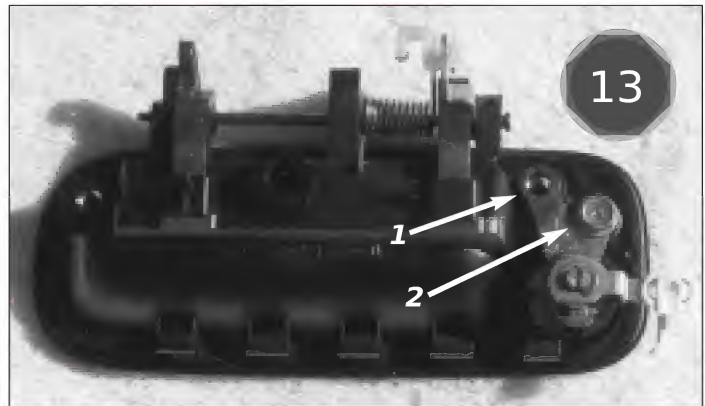
Start door panel removal by taking off the inside door latch release trim (see Photograph 10). Insert a small screwdriver between the trim plate and the lever to allow for the trim plate to clear the retainer pin on the bottom section, and repeat this step for the top section. (I note the importance of this step in order to avoid breaking this trim piece, as I have done so in the past.)

Photograph 11, indicates the five screws that must be removed at the front part of the panel and the two trim fasteners located at the back of the panel. Simply push in on the center of the fastener plug and then pull out the fastener housing for removal.

The next task is to remove the door panel and disconnect any electrical connections. You do not want to stretch them to the point that the wires snap or break. Gently pull back

**Continued on page 32**





**Arrow 1 shows the flange that makes it necessary to remove the handle before servicing the lock. Arrow 2 is the 10mm bolt that holds the lock to the handle.**

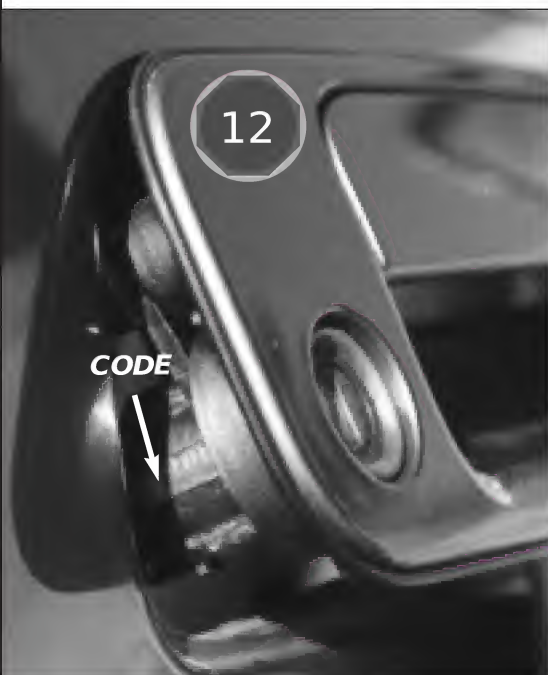


**These screws and fasteners must be removed from the panel for its removal.**

the inner panel plastic liner and remove the two 10mm bolts holding the handle assembly to the door skin. By pulling the handle assembly out from the bottom, it is easy to read the key code stamped on the side of the door cylinder (see Photograph 12).



**The disassembled door lock.**



**After removing the handle mounting screws, the key code can be seen by tilting the unit slightly out of the car.**

Because a mounting flange or tab on the lock lies between the vehicles body and the handle, it is necessary to remove the whole handle to service the lock. If you disconnect the handle and lock linkage you can then easily remove the handle/lock assembly (see Photograph 13). Remove the 10mm bolt that holds the lock cylinder to the handle assembly to separate lock from handle.

Photograph 14, shows the door lock cylinder completely disassembled.



**Location of the trunk lock.**

## Trunk Lock

The trunk lock cylinder, despite its appearance, is located in the deck lid and comes out the front (see Photograph 15). The rear center taillight assembly must be removed to gain access to the cylinder. It is necessary to use a 7mm socket to remove the nuts that hold the light assembly in place.

These models are equipped with inside trunk and gas release levers.

*Continued on page 34*



Continued from page 32



**This liner must be removed from the deck lid before gaining access to the light assembly and trunk lock.**

Before the trunk lock can be removed a liner has to be removed to gain access to the taillight assembly and lock cylinder (see Photograph 16).

Photograph 17, is a view of the light assembly set to the side.

The trunk lock cylinder is held in place by the standard horseshoe clip. Remove the clip and remove the lock. Before you disassemble the lock cylinder completely, be cautious of the ball bearing in the rear section of the lock (see Photograph 18). The lock cylinder is shown completely disassembled in Photograph 19.

## Glove Box Lock

To disassemble and remove the plug for servicing, pop off the plastic cap on the front of the lock (see Photograph 20). The spring plug retainer tumbler must be depressed to slide the plug out the front (see Photograph 21).

Photograph 22, shows the lock disassembled for rekeying purposes.



**View of the trunk lock with the light section removed.**

## Keying Kit & Tumblers

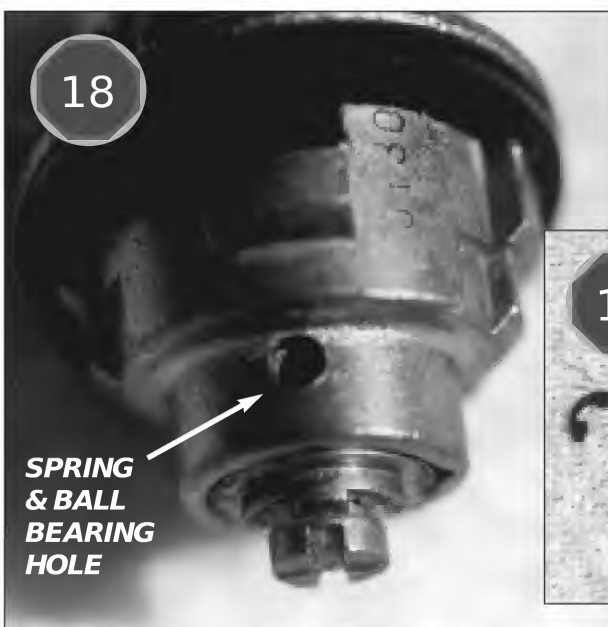
This model Toyota uses the Auto Security Products Keying Kit Number A30-108, using solid and split tumblers. The original tumblers are stamped with a depth number (see Photograph 23).

## Making First Key

To make a first key to the car:

Method #1: Remove the two 10mm bolts holding the passenger side door handle assembly, and pull it outward at the bottom, and read the code stamped on the side of the door cylinder lock.

Method #2: Remove a door or trunk cylinder, and disassemble to decode the wafers to make a master key to the car.



**SPRING & BALL BEARING HOLE**

**Be careful not to lose the ball bearing and spring located in the back of the lock's plug.**



**The disassembled lock.**

Continued on page 36

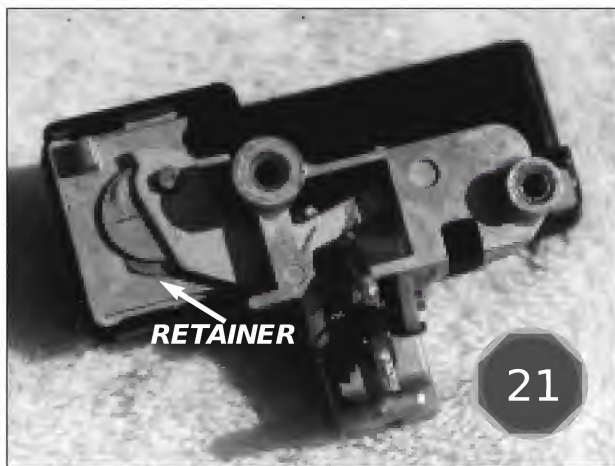




Continued from page 34



Gently remove the plastic cover over the plug.



This retainer must be depressed for the plug to slide out the front of the lock.

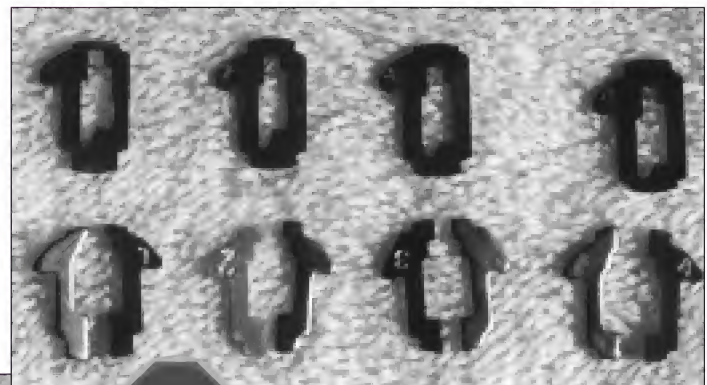
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The disassembled glove box lock.



The ASP pinning kit and Toyota split wafer system.

## Specifications

### Tumbler Locations:

1	2	3	4	5	6	7	8 (Bow to Tip)
X	X	X	X	X	X	X	X Ignition, Door, Trunk
				X	X	X	X Glove Box

**Code Series:** 10000-15000

**Key Blank:** Ilco X217 / TR47 / Silca TOY43  
HPC 1200CM Code Card: CF208

**MACS:** 2

**Tip to center of first cut (Bow side):** .883"

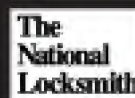
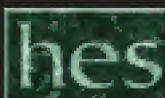
**Cut to Cut:** .090"

**Depths:** 1-.323", 2-.299", 3-.276", 4-.252"

**Framon:** Use Ford 5 PIN Spacing Clip.  
Set starting cut at .017" (First cut From Bow)







# BEGINNER'S CORNER

## Weiser Powerbolt



by  
**Jim  
Langston**

**T**he Weiser Lock Powerbolt is an electronic deadbolt which offers both keyed, and keyless entry (see *Photograph 1*). The unit will fit the same size hole as a standard cylindrical lock requiring a 2-1/8 inch cross bore and a 2-3/8 or 2-3/4 backset for the bolt. The deadbolt is adjustable for either a 2-3/8 to 2-3/4 backset. The bolt is easily adjusted by holding the front of the bolt and turning the back of the bolt. The deadbolt also has a roll pin in the middle to prevent sawing the bolt in two. It is also available in a drive in bolt.



**1. A new entrant in the arena of electronic locks is the Weiser Powerbolt.**

The Powerbolt lock can have two different combinations programmed into its memory. It can have one combination for you to use everyday, and a secondary combination to give to someone like a repair man to allow access to your home. The secondary combination can be changed at any time, and is very simple to do. We will be covering this feature later in the article.

The main components of this lock is a single cylinder deadbolt, a key touch pad mounted on the outside, a strike plate, a thumb-turn, and a circuit board mounted on the inside (see *Photograph 2*). It also requires four AA batteries to operate. This bolt is very easy to install, especially if you are using an existing hole with a 2-1/8 inch bore.



**2. The main components of this Powerbolt lock.**

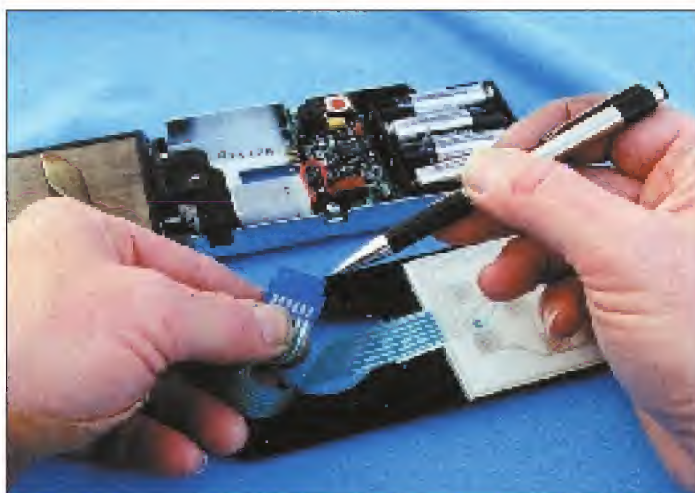
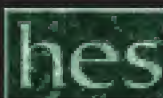
### Installation

With the 2-1/8" crossbore holes drilled, install the deadbolt. Once the deadbolt is installed, place the touch pad on the outside of the door. Place the power strip through the door over the top of the latch. **NOTE:** Do not remove the backing from the touch pad. It should stay on the touch pad.



**3. Remove the access cover from the power board.**





**4. The power strip used on the Powerbolt.**

With the key removed, place the deadbolt against the touch pad with the tail piece in the vertical position inserted through the hub of the latch. Attach the deadbolt with two large bolts through the mounting plate. The power strip should extend out.

Align the touch pad up with the small holes from the template and attach with the two 1 inch oval head screws. Do not over-tighten these screws. Next, remove the access cover from the power board. Hold and twist or pull up on the cover. It should

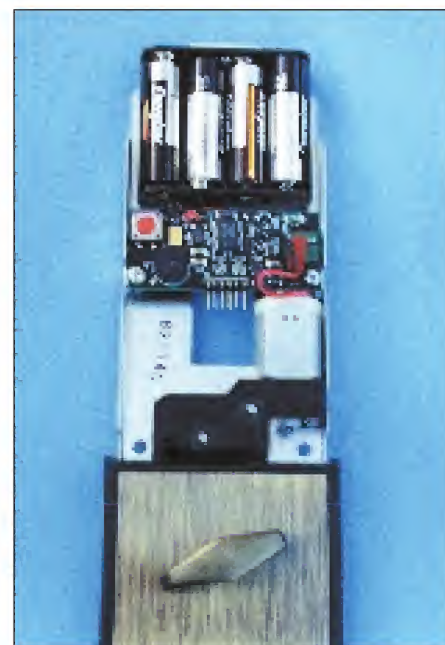
come off easily (see Photograph 3).

Feed the power strip (see Photograph 4) through the large square hole of the power board (see Photograph 5) and then plug it into the six prongs on the power board (see Photograph 6). Position the power board with the three small holes drilled from the template. Make sure the vertical tailpiece engages the T-turn and attach the power board with the three chrome-colored screws.

Install four AA Alkaline batteries. Battery positions are shown on the battery case. A series of quick beeps will sound when the batteries make complete contact.

**R**etract the deadbolt with the T-turn. Press the lock button on the touch pad. If the motor runs but the latch does not extend, you may have a left hand mounted door. All locks are

preset for right hand doors. For left hand mounted doors, unplug the connection from the motor (see Photograph 7) and turn it over 180 degrees and plug it back on the two prong connector (see Photograph 8).



**5. Feed the power strip through the large square hole of the power board.**



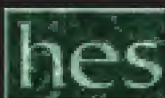
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**NOTE:** When manually locking or unlocking the deadbolt by turning the key or the T-turn, the motion will be firm. This resistance is normal. With the lock properly mounted, make sure the key works in the deadbolt.

#### Programming

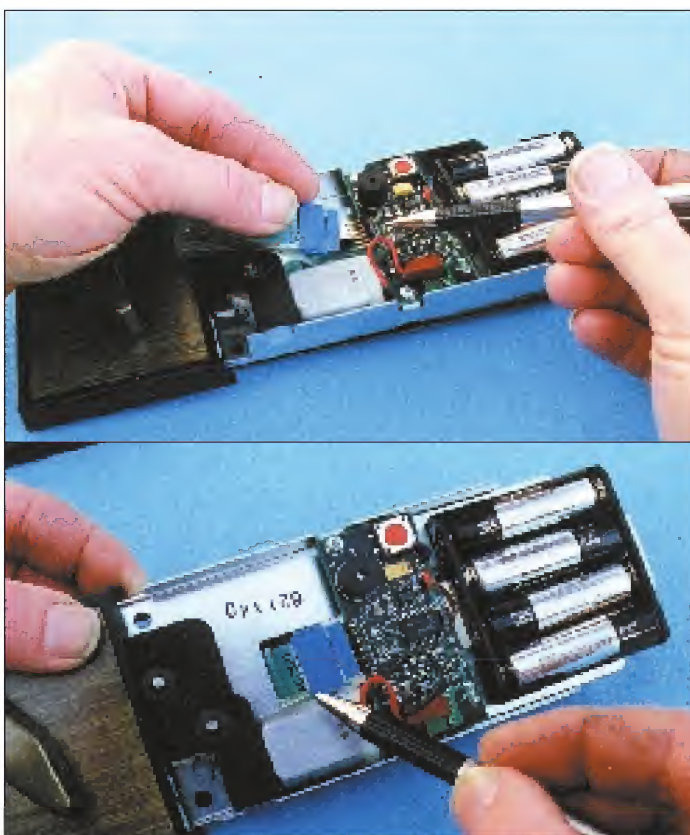
Now that the lock is installed, we will cover programming instructions. Programming the Powerbolt is very simple. First, push the program button on the power board once (see Photograph 9). Enter the desired four to eight digit code by pressing the numbers on the outer touch pad. Press the lock button on the touch pad to set the code. You will hear a two second long beep when your code is accepted. **If the unit does not beep, too much time has elapsed between pressing the program button and entering the code. Repeat the programming sequence.** Enter your number to verify that it retracts the latch.

To enter a second code, push the program button twice, then repeat the steps in programming the first code. With the codes entered, check the bolt several times using each code to make sure they both work.

Next, snap the access cover back onto the power board. If a scratch resistant protective film has been applied to the inner trim plates (or strike plates) this should be removed.

#### Operation and Important Information

Push the lock button on the outside of the touch pad to extend the latch bolt one inch which locks the door when you leave. Enter your desired personal code to retract the latch bolt



6. Plug the power strip into the six prongs on the power board.

completely which unlocks the door when you return home. The thumb turn on the inside of the door is used to extend the lock or retract the lock when you are inside. Using the key from the outside, it will also extend or retract the lock bolt.

**U**nder normal use, it is recommended to replace the batteries once a year. When the batteries are getting low, the motor will run slower and will take longer to retract the bolt. If the bolt does not fully retract or extend, entering the security code again will fully retract the bolt, or pushing the lock button again will fully extend the bolt. Batteries should be changed immediately!

For proper operation, the deadbolt latch should enter the strike freely with no restrictions. In mis-aligned door situations, make necessary adjustments to the deadbolt strike location and/or hole in the door jamb to allow the deadbolt latch to retract and extend freely. This alignment is very important.

Reprogramming the security code should not be necessary after changing the batteries. If required, the key can be used to retract the deadbolt. For added security, an unauthorized code warning is included. A warning tone will sound for fifteen seconds if an incorrect security code is entered three times consecutively. If this should occur, the touch pad will not operate for a period of one minute.

If the interior trim is exposed to extreme cold temperatures, the batteries will not operate the unit. This is normal behavior of all batteries and not a malfunction of the lock.

**I suggest that you STRONGLY recommend to your customers that they memorize their security codes. Also recommend not using their address or house number, phone number, or anyone's birth date. These are easily acquired facts.**

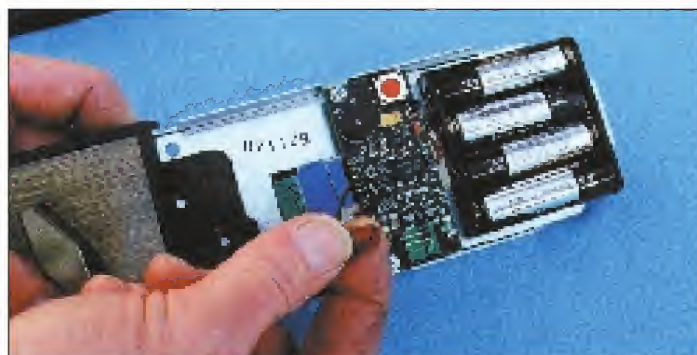
#### Troubleshooting Tips

##### If Electronics Are Not Working, Check The Following:

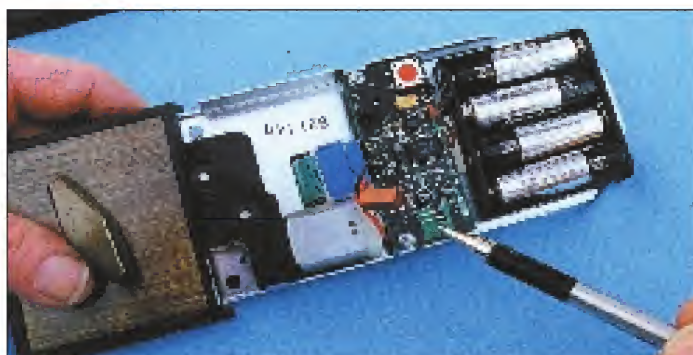
Are the batteries good?

Is the Power Strip plugged in properly?

Are the batteries installed correctly and making full contact?

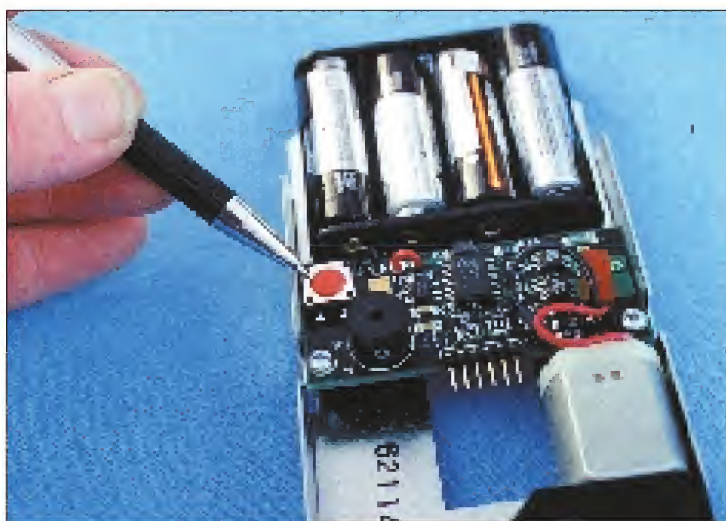
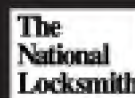
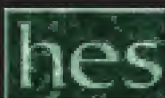


7. For left hand doors, unplug the connection from the motor.



8. Turn the connector over 180 degrees and plug it back on the two prong connector.





**9. When programming the lock, first push the program button on the power board once.**

You should hear a series of quick beeps when the batteries are installed correctly and making full contact.

#### **Handing of the Door**

The handing of the door is very important. If the bolt does not extend when the lock button is pressed, check the handing of the door. To change the handing, refer to the instructions previously given.

#### **Preset Factory Codes**

This lock will maintain two different codes. Two random codes are preset by the factory for testing. It is recommended that two new security codes be entered to cancel out the preset codes.

#### **Problems With Setting Security Code**

You will hear a two second beep when the codes are accepted. If the unit does not beep, too much time has elapsed between pressing the program button and entering the code. Repeat these steps faster. You have approximately three seconds after pressing the program button to enter the code in order for the code to be accepted.

#### **Unauthorized Code Warning**

For added security, a warning tone will sound for fifteen seconds if an incorrect security code is entered three times consecutively. The touch pad will not operate for a full minute after the tone. If several attempts were needed to set the security codes, the warning sound might have been activated. Wait one minute for the unit to be operational again.

The Weiser Powerbolt offers a number of benefits to the end user.

Obviously, the main benefit is the keyless entry ability, which should prove to be extremely beneficial to families with children who are always losing keys. That fact coupled with the general convenience of the unit makes it attractive to all.

**T**here is no doubt that electronic keyless entry is the way of the future. As such units prove to be more dependable and affordable, we will soon find that all of us will be using this technology. I don't know of a single person who wouldn't love to kiss their keys good-bye. That time may be closer than you think.

For more information on the Weiser Powerbolt, call: 800-677-5625, or a dealer near you.

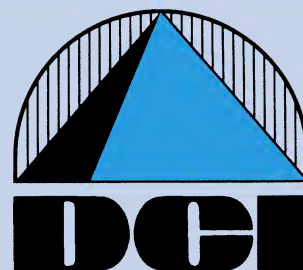
#### **Points to Ponder**

Our favorite attitude should be gratitude. **TRL**



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**COVER  
STORY!**

# NAILING KNOBLOCKS!



by  
**Dale W. Libby,**  
CMS

*Aside from educating the public of the importance, function, and purpose of various locking hardware, the significance of choosing the proper hardware for the given situation is just as critical.*

*Waking up on the wrong side of the bed one morning, I looked around trying to find a dog to kick. Wait a minute, I thought, I don't have a dog. Hmmm. This presented a problem because total strangers don't like it when you kick their dogs.*

*So it was either go stick up a liquor store or fire up The National Locksmith test lab to run a torture test on some locks. Much better idea. My chances of going to the Joliet state prison for ten to twenty would be much less. No, I didn't get to play with the forklift, but consider the following.*







**1. A Grade 3 knoblock installed on a steel door and frame in The National Locksmith laboratory.**



**2. The knob was then easily crushed with pliers, and turned.**

For the most part, the general public has no clue that a knoblock is not designed for security purposes. As far as they know, it incorporates a lock and will keep the door closed. What more could you want?!

Aside from educating the public of the importance, function, and purpose of various locking hardware, the significance of choosing the proper hardware for the given situation is just as critical. Far too often we see inferior grade hardware being used in the given application, providing little or no security at all. Many times the hardware is not even functioning properly, because it is being used in an application it was not designed for.

How many times have you encountered a door where the knoblock roses are flopping around, the latch is permanently positioned in the retracted state, and the lock looked like it was ready for the graveyard? Too many times. Is this type of scenario the result of an inferior product? Usually not. It's the result of a product being used in an application it was not designed for. Just because it's a knoblock does not mean it is designed for any application.

Key-in-knob locks currently come in three Grade ratings, namely Grade 1, 2 and 3. This may be confusing at first, because it is similar to how wire sizes are numbered. The smaller the number, the larger the physical wire size. In

**H**ow many times have you walked up to a building and found only a knoblock securing the door? I know you have seen it far too many times, especially in residential settings. What is really surprising though, is how many times you will find just a knoblock securing a steel door in a commercial complex, with no security bar on the inside. What's worse yet, is when the knoblock is a Grade 3 lock!



**3. The deadlatch retracted, but not enough to open the door.**



**4. I continued twisting the knob until it twisted off the chassis.**



locks, the smaller the Grade number, the higher the quality. Rather confusing, however, that is the standard.

**W**e will not discuss particular brands or their good or bad points here. The purpose of this torture test is to evaluate the differences between the various Grades of locks, and see if a higher Grade lock really is higher in quality and security. The test is not designed to see which brand lock is better than the other, or how quickly a lock can be defeated. We all know knoblocks are not designed for security, they are designed to keep a door closed, not necessarily secure. We wanted to see just how much more abuse a Grade 1 lock can withstand as opposed to a Grade 3? We will soon find out.

Let's first have a brief discussion of lock Grades and what they mean. Simply put, a Grade 1 lock is considered an industrial strength lock. All parts are heavy duty. Instead of slides, they may have roller plates, heavier springs, and thicker metal parts. The finish is better, and will weather the best of all the Grades. The prices reflect this greater attention to detail and workmanship as well. Most Grade 1 locks have 6 pin cylinders with many interchangeable options.

A Grade 2 lock is considered a commercial Grade lock. Grade 2 locks offer the bonus of being able to be keyed into existing key systems with the replacement of cylinders in the knob to a specific keyway. Usually these locks are 5 pin chambered, but 6 pin cylinders are not unheard of. Not all Grade 2 locks have interchangeable cylinders however.

A Grade 3 lock is considered a residential Grade product. Grade 3 locks should be used in home applications only. In my opinion, on inside doors only. The primary exit and entrance doors should have a Grade 2 lock on them. That's strictly my opinion though.

A Grade 1 lock can be used in either an industrial, commercial or residential application. A Grade 2 lock can be used in either a commercial or residential application, and a Grade 3 lock should only be used in residential applications. When a lock is utilized in an application it is not designed for, the operation and life cycle is greatly reduced. A customer may be saving money initially by selecting a less expensive product, but will encounter more problems, and ultimately be less satisfied. It is always advisable to sell your customer the proper hardware for the given situation — even if they resist, — it will save you headaches as well.

Each American National Standards Institute (ANSI) Graded lock must meet specific strength and operational requirements. The operational requirements for a Grade 3 lock is 200,000 cycle tests. For a Grade 2 lock it's 400,000 cycle tests, and a Grade 1 is 800,000 cycle tests.

This is an interesting statistic that shows a Grade 1 lock has twice the operation cycle as a Grade 2, and four times that of a Grade 3. These are just a few of the differences between the Grades. You, the security professional, must advise the



**5. The Satin Chrome lock installed on the door and gripped with the pliers and twisted.**



**6. I finally twisted the knob, but could not retract the deadlatch.**



**7. The knob was completely twisted until the knob retainer was compromised.**

customer as to his needs, and not necessarily to his wants, which may be of price alone.

I talked to a lot of hardware locksmiths, and received a range of opinions on particular lock brands and Grade ratings. Some stated that one manufacturer's brand X Grade 2 lock is better than another manufacturer's Grade 1 lock. This is not germane for this article however. We just wanted to smash and bash.

Now, on to the fun part, the actual testing of these knoblocks. We used two locks of each Grade category for testing, and each Grade was pretty much the same. The three tools used is a pair of slip pliers, a screwdriver, and last but not least, a regular claw hammer. These are common



**Continued from page 44**

tools found in every garage tool box of the average homeowner, and thief. Nothing special, nothing esoteric.

**GRADE 3 KNOBLOCKS**

Photograph 1, shows the testing of a Grade 3 knoblock installed on a steel door and frame in *The National Locksmith* laboratory. The lock was installed on our test door, and the knob was then easily crushed with pliers, and turned (see Photograph 2). At this point we checked to see if the deadlatch had retracted or not. It did retract slightly, but not enough to open the door (see Photograph 3).

I continued twisting the knob until it twisted off the chassis (see Photograph 4). It was then a simple matter of inserting a screwdriver in the deadlatch mechanism to retract the latch.

These locks should never be used on an entrance door unless there is a deadbolt additionally installed. Resistance to entry was minimal. The knob was easy to crush and twist off, with minimal noise emitted. With the knob removed, the lock is then vulnerable to an easy bypass.

**GRADE 2 KNOBLOCKS**

The Grade 2 knoblocks were put through the same grueling, torturous procedures. These locks put up a much better fight than its Grade 3 counterpart. The Satin Chrome lock is installed on the door and the knob is then gripped with the pliers as before (see Photograph 5). It was much harder to crush the knob on the Grade 2 with slip pliers. The metal used was much stronger, and resistant to crushing and twisting.

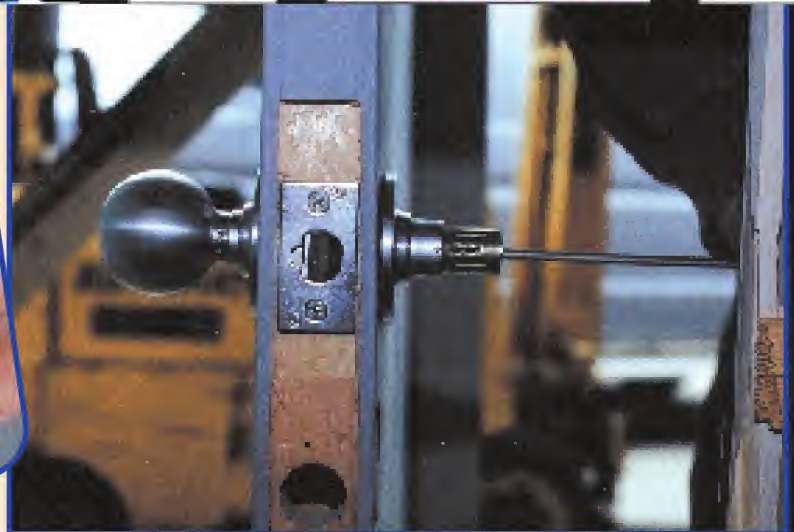
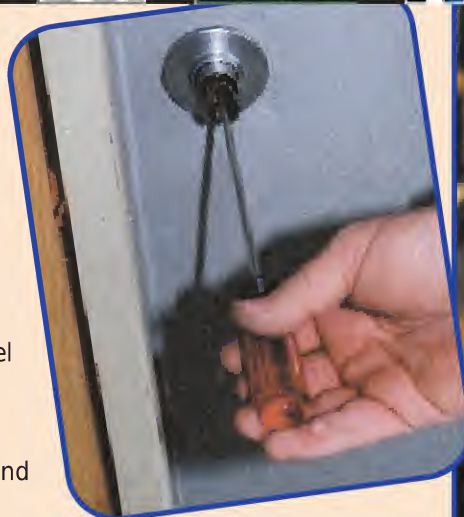
I finally twisted the knob, but could not retract the deadlatch fully (see Photograph 6).

The knob was then completely twisted until the knob retainer was soon compromised. The knob was then pulled off the door, still without retracting the latch (see Photograph 7). I then inserted a screwdriver and opened the door (see Photograph 8). Both Grade 2 locks put up a good fight, but both knobs were eventually pulled off and opened.

It was easy to see why Grade 2 locks are recommended for commercial applications. The lock did withstand much more abuse, which one can only expect would function and last longer in practical use. This lock should still only be installed on a door if accompanied by a deadbolt, unless it is being used for an interior application. Even then, it is still not designed for security purposes.

**GRADE 1 KNOBLOCKS**

Make no mistake about. Grade 1 locks are the top of the line, not only in quality, but price as well. There was a significant difference between a Grade 2 lock



**8. I then inserted a screwdriver and opened the door.**

and a Grade 1, and absolutely no comparison between a Grade 3 and a Grade 1. Even I was surprised at how much stronger a Grade 1 lock was. It withstood

tremendous punishment when compared to the lesser grade locks, as well it should. It even felt much better in the hand. The added solid weight transcended as quality when gripped by the hand.



**9. An attempt to crush the knob was tried.**



**10. Trying to twist the knob at the stem resulted in the same failure.**





**11. Next, I took the hammer and beat the knob off the door.**

The exact same torture procedures was applied to this lock as the others. The lock was installed and an attempt to crush the knob was tried (see Photograph 9). First, I was unable to get a grip of any kind on the outside of the knob with the pliers. I'm over 300 pounds and I could barely mar the finish, let alone crush it.

Grabbing the stem of the lock to try and twist the knob resulted in the same. (see Photograph 10). No damage could be done with the tool that so easily mangled the Grade 3 and Grade 2 locks. Next, I took the hammer and beat the knob off the door (see Photograph 11).

With the outside knobs gone, it was easy to poke around the remains and withdraw the latch with a screwdriver (see Photograph 12). Once again the lock was resistant to a forced entry but not unbeatable. The Grade 1 lock was however, significantly more resistant than the others.

As a conclusion to the laboratory torture testing; there was no doubt that each Grade of lock would perform its function when used in the proper application. There was also no doubt there is significant differences between each Grade of lock, supporting the fact that more expensive really does translate into a better product.

I tried to make the test somewhat fair by only using home tools. I am sure none of these locks would have resisted



**12. With the outside knobs gone, it was easy to poke around the remains and withdraw the latch.**

much, had I used a 3 foot pipe wrench. The point of this is to help you educate your customer, be it residential, commercial, or industrial, as to the benefits and shortcomings of using key-in-knob locks as security. And the shortcomings of using improper hardware for the application.

OK, so I didn't get to play with the forklift, but on my way home, I stopped to pet a stray dog.

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# The SDC Solution



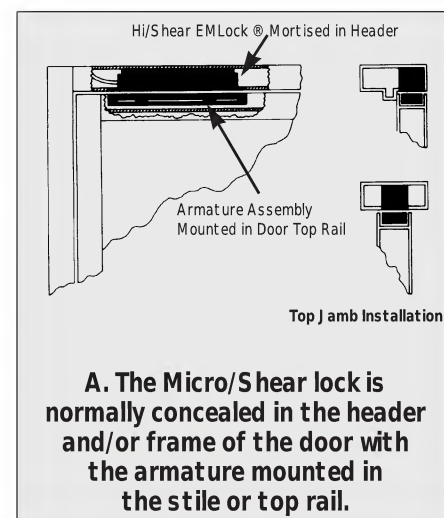
**1 The SDC 1561 high performance electromagnetic Micro/Shear Emlock.**

About a month before Christie and I went to the ALOA trade show in New Orleans, one of our customers had called and asked me to find a way to electronically secure a pair of double-acting doors (the type that swings both ways) and a single double acting door on a new convenience store they were building. Sounds easy enough until you realize that normal magnetic locks are precluded by the fact that the door(s) do swing both ways. This means: even if you could mount the magnet and shoe plate (the armature) properly, the lock would not hold against "shearing." And, electro-mechanical deadbolts are not practical from a wiring, mounting and alignment standpoint.

After several inquiries to various suppliers, I had to tell our customer that I would "see" what I could find. They were satisfied with that, and it was in New Orleans that I ran up on Shane Geringer from SDC. When I explained my needs, he recommended an SDC 1561. In fact, Shane sent me one after the show to look over and evaluate.

For those of you who do not know what an SDC 1561 is, it's a high performance electromagnetic Micro/Shear Emlock (see Photograph 1). It is normally concealed in the header and/or frame of the door with the armature mounted in the stile or top rail of the door (see Illustration A). The "shear" factor comes in when you consider that although a magnetic lock normally provides superlative protection from pulling pressure, even the most tenacious magnetic locks can

be "slid" apart. SDC's 1561 eliminates the "shearing" problem by using two shear tabs (see Illustration B). The shear tabs prevent the magnet and armature from being slid apart.



Unfortunately, the type of doors used on this new convenience store had a concealed closer in the header which precluded mounting the magnet in the header (I would have had to mount the magnet too close to the "nose" of the door in the header (see Photograph 2). To compound the problem, the armature could not be mounted in the top rail of the door without interfering with the structural integrity of the door itself. In plain words: The "normal" mounting configuration for the 1561 wouldn't configure to this particular application without some modification.

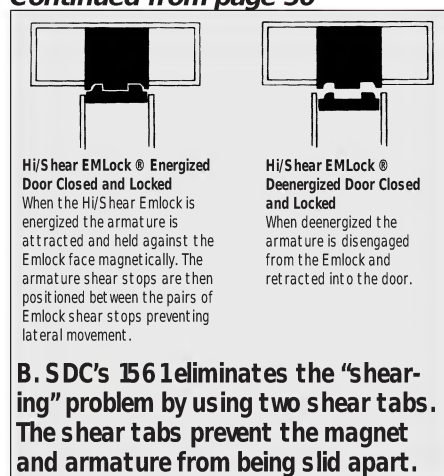
I called Shane Geringer at SDC to explained my problem and asked if he could offer an idea or two. He suggested SDC's 1561TJ which is a 1561 within a "can" for surface mounting to the header and top door rail. However, there was still one more modification needed.

Illustration C, shows a cross-section diagram of the door and frame. The header is 4-1/2" wide and 1-3/4" thick. Consequently, when the magnet was surface mounted to the header, the armature would not line up under the magnet because of a 1-3/8" difference between the inside edge of the door's top rail and the inside edge, or the face of the header. That difference was compensated for by making a 1-3/4" x 1-3/8" spacer out of solid polypropylene (see Illustration D).

With the armature mounted to the spacer and through-bolted to the door's top rail with sex-bolts, the



Continued from page 50



armature is not only aligned with the magnet but is very securely mounted to the door (see Photograph 3).

O.K. Let's talk about the installation:

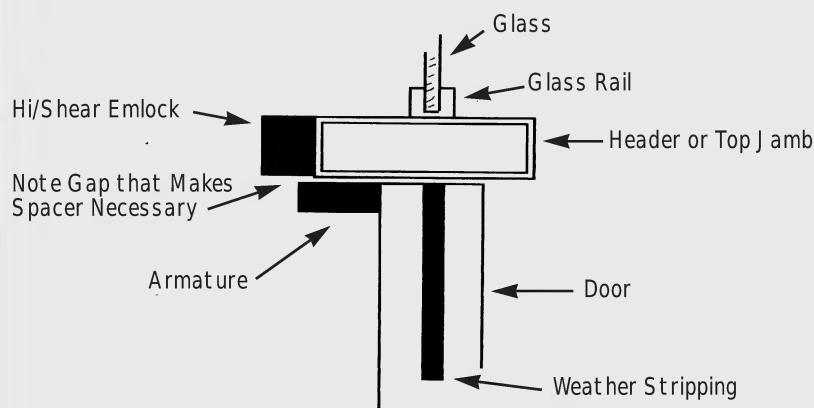
**F**irst off, if you're going to install electromagnetic or electro-mechanical access control products, you already have most of the tools you will need in your standard locksmithing tool box. What you may not have, but should not be without, is a Volt/ Ohm meter, wire strippers, various wire nuts & couplers, some wire ties and some Wire Mold or CableMate (which is made by Wire Mold) for concealing the wiring. And — this is purely my personal opinion — a Curtis Industries Gripsert Tool. The Gripsert tool surely does make mounting anything from magnets, to door stops, to door closers on aluminum or steel doors, or door frames, a whole lot simpler! Personally, I wouldn't be without mine.

The first step in the installation process is to make sure that the double acting door closes and stops properly. That is: as it closes, it comes to rest quickly and as near dead center as it is possible when closed. Photograph 4, shows the adjustment screws for setting the closing, latch speed and degree of centering that you want. Once you have the door as near perfectly adjusted as you can get it, you're ready to proceed with the installation of the SDC 1561.

In this case I installed two locks on two separate doors with the locks wired in parallel. See Illustration E, for the wiring diagram.

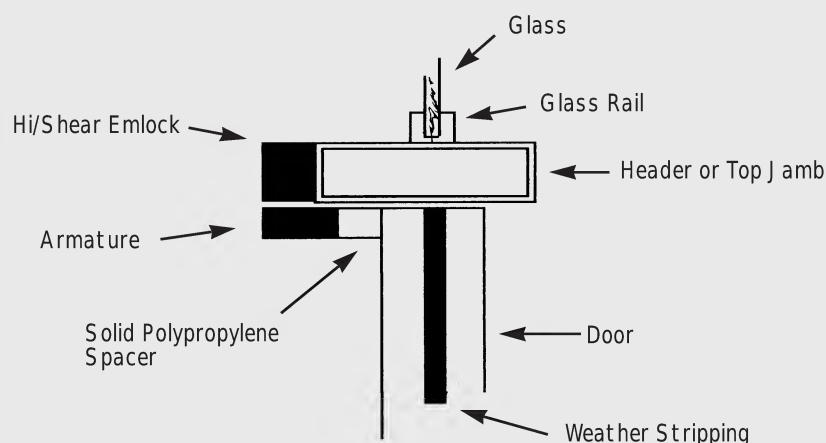
Once you have adjusted the doors to your satisfaction, place the magnet and "can" against the header and mark your drill sites. You may still get the left or right — depending on the

This cross-sectional representation of the header and door shows why the magnet and armature would not align when the door was at its "rest" or stop position. Drawing is not to scale, refer to text for measurements.



C. A cross-section diagram of the door and frame.

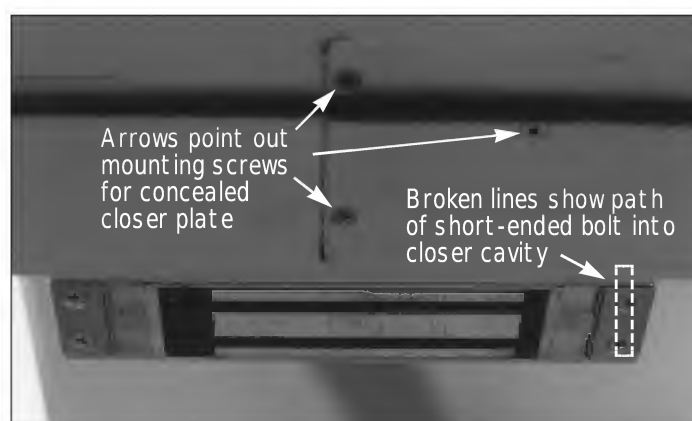
Solid polypropylene spacer allows magnet and armature to align when the door reaches its "rest" or stop position. Drawing is not to scale, refer to text for measurements.



D. A polypropylene spacer block was used to adapt the lock to the door header.

hand of the door — mounting screw into the closer cavity. Just shorten the cap screw to compensate for the difference on this one bolt and you will not have a problem.

After marking the drill sites, drill the mounting holes and place a Gripsert in each hole. Drill an appropriate sized hole in the face of



2. A concealed closer in the header of the doors precluded mounting the magnet in the header.



the header to accept the wire from the magnet and drill a hole in the top of the header to pull the wire through. Now, mount the magnet and tighten it down.

Next, close the door and using a 1/8" spacer, place the armature against the bottom of the magnet and mark the drill sites for the armature on the top rail of the door itself. Use a 1/4" bit to drill a pilot hole completely through the rail and enlarge that hole on the outside only to 3/8" to accept the sex bolts.

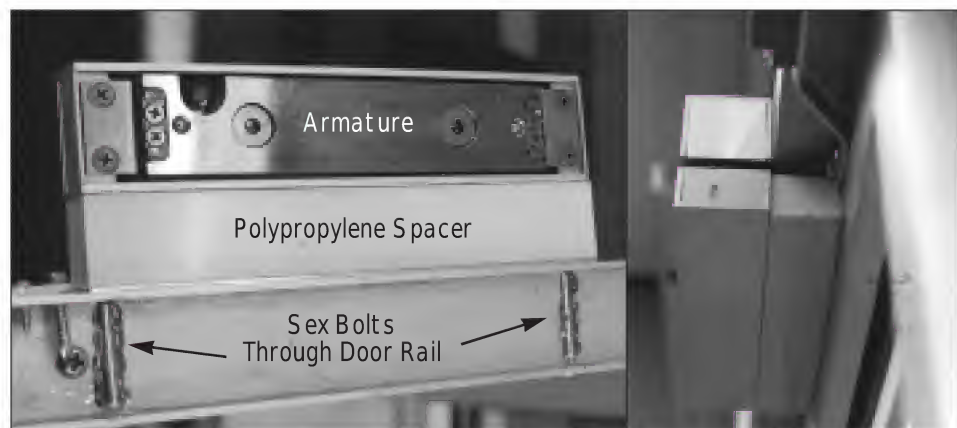
Since it is necessary to use the polypropylene spacer I mentioned earlier, you have to use 3-1/2" x 1/4" x 20 cap screws with your sex-bolts rather than the 2-1/2" x 1/4" x 20 provided by SDC in their mounting hardware kit that comes with each 1561. Now mount the armature making sure that there is no more than a 1/8" clearance between it and the magnet. Tighten it securely to the door's top rail.

Install your switch(es) and run your wiring. After hooking everything up except the transformer and rectifier, use your Volt/Ohm meter to check your circuitry and make sure that there are no shorts or other problems. Also check to see that you have maintained polarity throughout the system.

Before wiring in the transformer and rectifier, make sure that the transformer you are using is properly matched to the system you are installing. In this case you are driving two magnets with a combined amperage draw of 700 milli-amps at 24VDC (.70 amps). Consequently, your transformer output has to be 24VAC (the rectifier will convert it to DC) and a minimum of 24 V/A, or 1.0 Amps. The transformer I use has an output of 24VAC with rating of 30V/A, or 1.25 amps which would be more than sufficient to carry the load generated by a pair of SDC 1561TJ's.

Now power up your system and check the operation. If everything is working within the recommended parameters, "button up" your switch(es), and wiring conduit and you're done.

This particular job took my friend Jerry and me about five hours to complete. That includes the time spent adjusting the doors, and figuring out where and how to run the wires so they were concealed. *Photograph 5,*



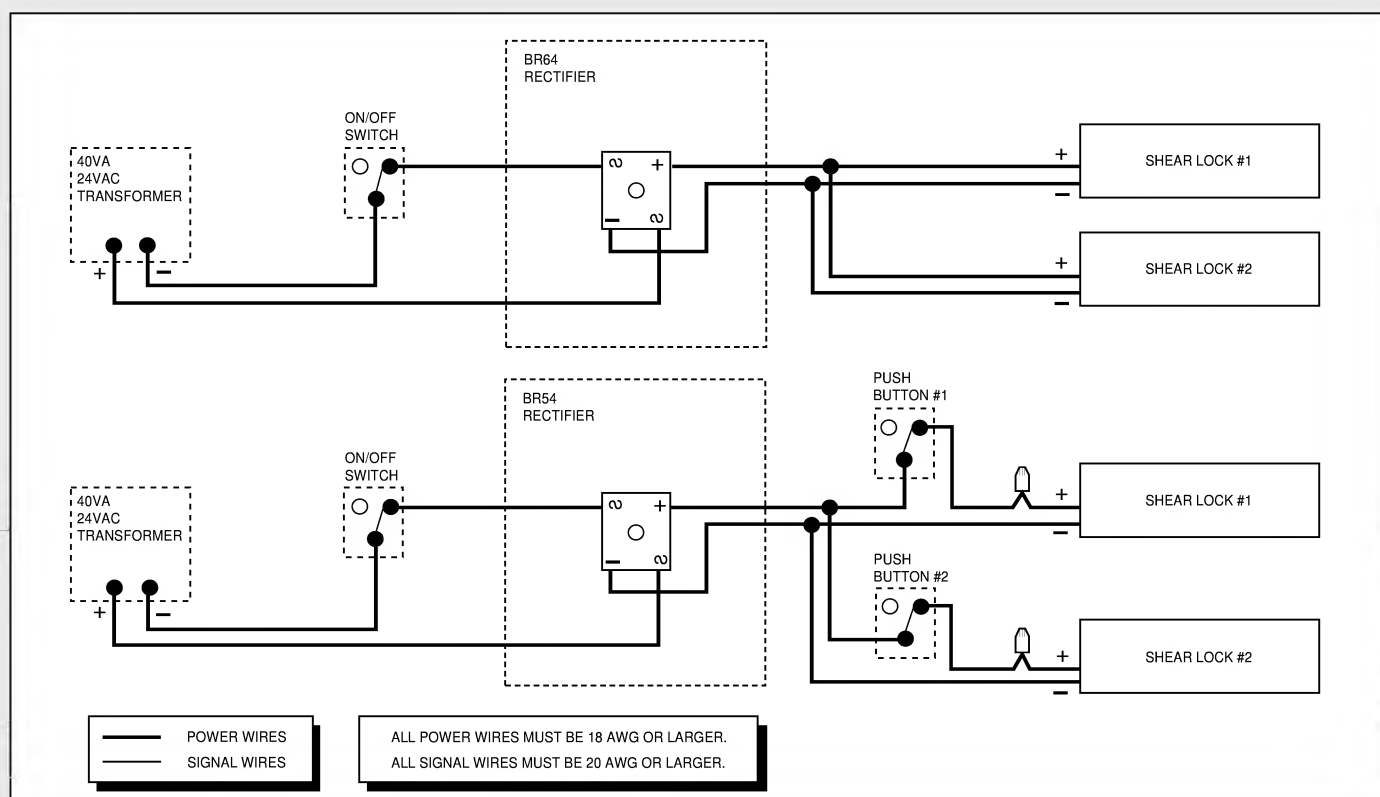
**3. The armature is mounted to the spacer and through-bolted to the door's top rail with sex-bolts.**



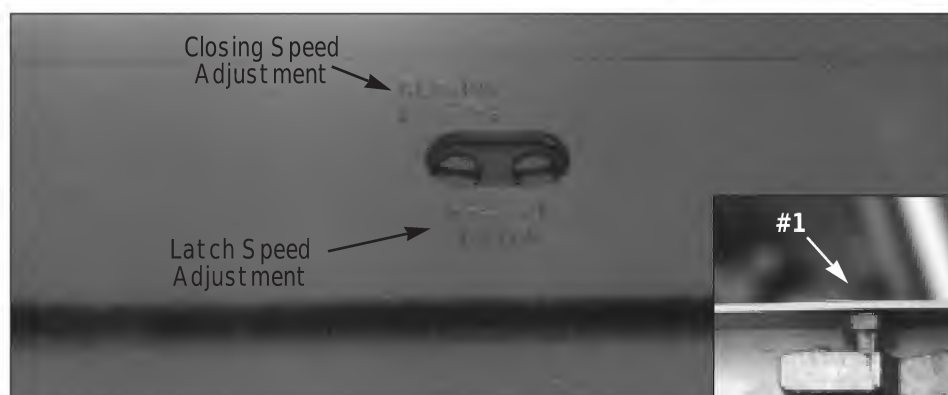
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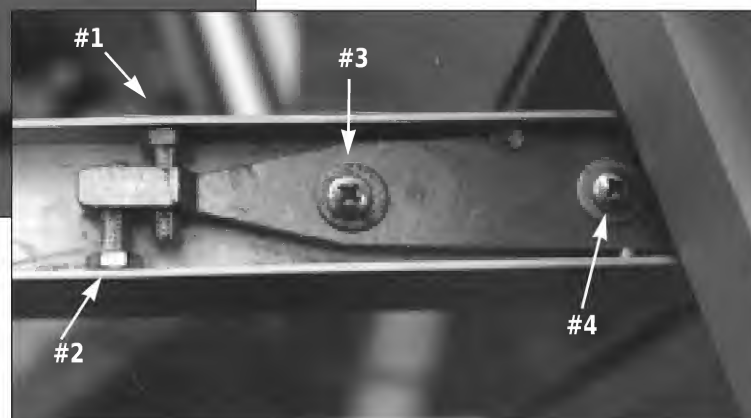




**E. I installed two locks on two separate doors with the locks wired in parallel. This is the wiring diagram used to accomplish that.**



**4. The adjustment screws for setting the closing, latch speed and degree of centering that you want on the doors.**



shows the CableMate conduit we use on this job. It's available from nearly any home center's electrical department. It's a plastic snap together type of conduit with double-faced tape to hold it to the surface you mount it on.

**A**s you can see from the photograph, the conduit is available not only in straight pieces but in outside/inside corners, couplers and angles. What makes this product so easy to use is the fact that the "conduit" slips over the wire and snaps closed. Just pre-cut the length you need, slide it over the wire, snap

it shut, peel the face paper off of the tape and stick the conduit to the wall or surface. For small jobs

and short runs of low-voltage wiring, I think it's an attractive and ideal way to hide your wiring.

As I mentioned earlier, this was the first electro-magnetic installation using a shear lock that I have done. I think the SDC 1561TJ is a well designed product that fills a definite need. It installs fairly easily, looks

good (even when it is not mounted in a concealed application as intended) and it works! Judging from the product and the information provided to me by Shane Geringer, the 1561TJ should do its job for a long time to come. That's important to me because it helps guarantee customer satisfaction and means that I will be





5. The CableMate conduit we use on this job is a plastic snap together type of conduit with double-faced tape to hold it to the surface you mount it on.

less likely to be bothered with call backs.

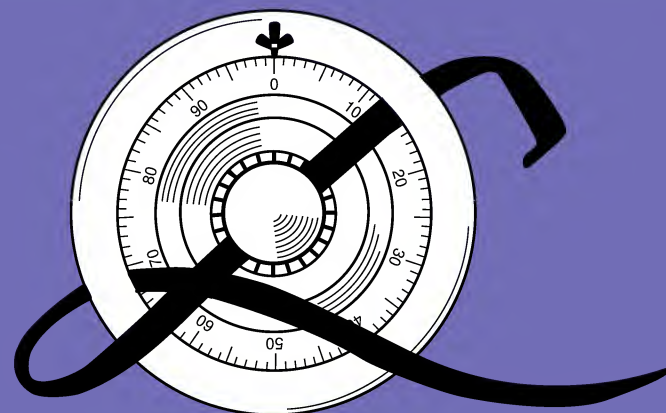
Electronics, electro-mechanical and electromagnetic locksmithing is not just around the corner any more: it's here — today. If you're not already "into" it, you should be making moves in that direction. Manufacturers like SDC and schools like Lockmasters offer classes in these areas. Take advantage of the opportunities available to you to learn electrical locksmithing and put yourself in a position to say: "I can handle that," the next time a customer wants to put some shekels in your pocket.

Y'all heah what I'm sayin' now?

**F**or more information on SDC's 1561TJ or other SDC products call SDC at 805-494-0622 (Fax: 805-494-8861) and tell 'em: "Jake told me to call."

The Gripert Tool, made by Curtis Industries (Part #87026) is designed to place threaded inserts into aluminum or steel surfaces. It can be used to place those inserts for mounting door closers, magnetic locks and a wide variety of other hardware.

For more information on Griperts and Gripert Tools, contact Curtis Industries Customer Service Department at 216-446-9700. **TNL**



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# BUSINESS BRIEFS

## Defiant Safe

International Dual Vault survives a 14 hour brutal attack. Burglars torched,



hammered, and tried prying the door open, but the barrier materials manufactured in the UL TL-15 were too much for the would-be thieves. The safe was returned to its rightful owner and professionally opened by Chelsam, Inc. of Rockford, IL, with technical assistance by Defiant Safe Company.

## New National Sales Manager for Dynalock

John L. Schum, has joined DynaLock Corp., as its National Sales Manager. He has served as engineering manager, technical service manager and customer service manager for leading companies in the security hardware industry and brings 20 years experience to DynaLock.

DynaLock Corp. 705 Emmett Street, Forestville, CT 06011-9470 Phone: 860-582-4761 Fax: 860-585-0338

## Monaco Lock Company Introduces Two New Lines: Meilink and Perma-Vault

These companies manufacture safes, vaults, and cash boxes. Both are committed to quality products and can help you

with security and cash protection. Suggested for homes, businesses, offices, churches, and all cashier areas.

Come and visit the displays in our showroom or call us for more information: Monaco Lock Company, Inc. 800-526-6094.

## All-Lock Appoints New Aftermarket Product Manager

All-Lock is proud to announce the hiring of Tom Seroogy as Aftermarket Product Manager. Seroogy has more than 13 years of automotive locksmith experience, as well as having served three years as Managing Editor of the *The National Locksmith* magazine and Director of The National Locksmith Automobile Association.



## Acme Stocks Electrical Hinges

Acme Security Systems has in stock electric hinges that are UL listed for doors requiring concealed low voltage power transfer to electric mortise or cylindrical locks, electric strikes (pairs of doors), and electric latch retraction panic devices. These electric hinges are stocked in a variety of sizes



and finishes. In addition 4, 6, 8 and 10 wire models are available. Concealed electric monitoring or concealed

electric monitoring with power transfer are also in our inventory. For additional information call 800-348-2263 or fax us at 800-435-8233.

## Tanner Bolt & Nuts New Security Fastener Catalog #97A

Tanner Bolt & Nut has published its new, Security Fastener Catalog #97A. The latest in a series of special application catalogs, this publication is designed as a resource for both the designer and installer. It includes specifications, suggested applications and pricing for a wide variety of tamper-resistant fasteners, anchors, and tools. The expanded selection in this revised catalog was chosen to meet the fastener needs for both everyday jobs as well as the application that requires something different. The catalog is free upon request.

## McGunn Smart Safe Seminar

Fred Gerard (right) of University Lock & Safe Service, Watertown, Massachusetts, looks on as Larry Ladd, manager of customer service for Chicago-based McGunn Safe Company,



demonstrates how to load a cash tube into the McGunn Smart Safe 2000. Gerard was one of nearly 50 locksmiths representing 25 companies nationwide who attended a recent McGunn seminar on computer-controlled safe

technology. Each participating locksmith received a certificate of Smart Safe qualification, plus sales discounts and a commitment for future service leads. McGunn plans to offer similar seminars throughout 1997.

For more information, contact Falk Associates at 847-675-2580.

## Electrical Bolt Lock Literature Available at SDC



New Electric Bolt Lock Literature is now available from Security Door Controls (SDC).

With complete descriptions, photos, diagrams and specifications, the SDC Electric Bolt Lock Literature includes the Spacesaver design for narrow frames, direct throw for wood frames, surface mounted, Electro-Mechanical GateLok, and the PanicLok for access control of emergency panic devices.

A complete line of SDC manufactured electric locking hardware and accessories is also included. To order the SDC Electric Bolt Locks Literature contact SDC at 805-494-0622 or Fax: 800-959-4732. **TNL**



# Auto Opening Opening The



**T**oday we will be opening the all-new 1997 Toyota Camry. The Camry is one of the best selling cars in the country, and the much anticipated all-new model has the critics raving and the people buying. As a result, locksmiths across the country will see a lot of new Camry owners on the road and some in parking lots trying to get back into their new cars. Toyota has a reputation for making sophisticated and difficult to access lock linkages, and they build on that reputation with the Camry.

For this opening, we will be using the High Tech Tools Model 2500 Opening System. The Model 2500 is the new car opening update set from High Tech which covers all the 1997 automobiles. The Model 2500 includes an entirely new tool created for the sole purpose of opening the 1997 Camrys. The tool, named, appropriately enough, the Camry Tool, is the 1856NC. To execute this opening, we will be using the rear passenger side door instead of the front passenger side door used in most other automobile openings. The 1997 Camrys only come in the 4 door sedan versions, the 2 door version is no longer being offered.

Begin by inserting your strip saver and wedge at about the half-way point of the rear passenger door. After insertion, look into the door cavity created by the wedge. Inside the car door approximately half an inch in front of the door lock lever, you will see a yellow button. This yellow button will serve as your guide for tool insertion, so pay close attention to where it is.

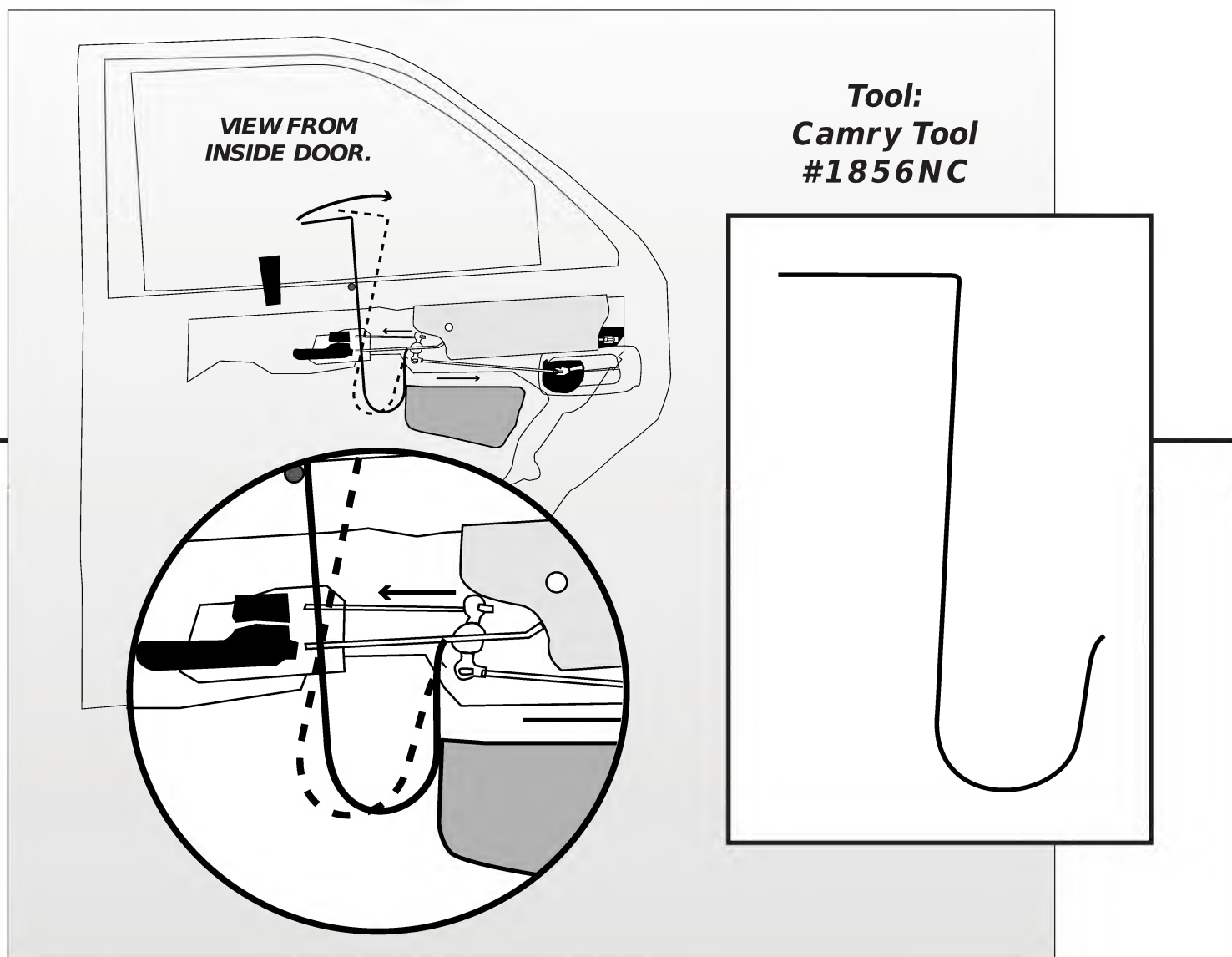
Lower the tool into the door with the tool handle pointing towards the front of the car and the "U" end of the tool facing the rear of the car. The insertion position is to the immediate left of the yellow button. Make sure the long, straight back of the tool is actually touching the yellow button. That is the correct insertion point, and the only way to ensure you will be able to access the correct linkage in the door.

Lower the tool into the door below the opening in the inner door frame. When the tool reaches that opening, turn the tool handle slightly away from the car and lift so the tool can enter the opening and access the linkage. When the tool comes in contact with the linkage, you should feel the contact in your hand and you may even see the lock button move.

Next, carefully ROCK the tool forward to move the linkage and unlock the door. It is important to rock the tool and not just move it forward, as moving the tool will only cause loss of contact with the linkage. By rocking the tool, the linkage will move and the door will unlock enabling you to open it.



# 1997 Toyota Camry!



If you rock the tool but fail to unlock the door, simply reset the tool by lowering it then lifting to contact the linkage again, and try rocking the tool once more.

## Opening Instructions

1. Using REAR PASSENGER SIDE DOOR, separate glass from weather-stripping and insert wedge.
2. Look down into the door and locate a Yellow BUTTON, approximately 1/2 an inch IN FRONT of the door lock lever. The Button is your guide, showing you where to insert the tool.
3. Lower tool IN FRONT of and touching the BUTTON (SEE DIAGRAM ).
4. Lower tool below hole in inner door frame, turn tool and lift.
5. Contact linkage with tip of tool, rock tool forward to move linkage - do not twist or turn tool, rock it gently.

**NOTE:** If the door does not unlock, lower the tool and try again.

**NOTE:** The 1851 NC "U" tool looks similar to the 1856NC, but will not work for this opening - you must use the 1856NC. **TNL**



# TECHNITIPS

**Helpful tips  
from other locksmiths.**



by **Jake  
Jakubowski**

## These Prizes Awarded Each Month!

- All Lock Ford or GM Kwikit
- Aero Lock Tryout Key Set
- Strattec Racing Jacket
- HPC Pistol Pick™
- Sargent and Greenleaf 4400 Series Safe Deposit Box Lock
- A-1 Security Products
- Silca Key Blanks (100 blanks)
- Pro Lock PK 15 Professional Lock Pick Set
- Tech Train Training Video
- Sieveking Products GM E-Z Wheel Puller
- Major Manufacturing Products
- The Sieveking Auto Key Guide
- Jake's Surprise Grab Bag Prizes

## Send in your tips, and win!

### How to enter

Simply send in your tip about how to do any aspect of locksmithing. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Write your tip down and send it to: **Jake Jakubowski, Technitips Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107** or send your tips via E-mail to the E-mail address posted in the box below. You may win cash or merchandise. At the end of the year, we choose winners for many major prizes. Wouldn't you like to be a prizewinner in 1997? Enter today!

## Best tip of the month

If your tip is chosen as the best tip of the month, not only do you win the All-Lock A-6200 Auto Service Kit, but you also automatically qualify to win one of the many excellent year end prizes!

## Every published tip wins

Yes, every tip published wins a prize. If your tip is printed, you'll win \$25 in Locksmith Bucks. You can use these bucks to purchase any books or merchandise from *The National Locksmith*. Plus, be ready for Jake's Grab Bag prizes! Remember, everyone wins. (Please remember to include your complete mailing address - we cannot mail prizes to P.O. Boxes.)

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### Internet: natllock@aol.com

Use the Internet address  
if you are not on AOL.

I've received several tips from folks that have asked to have such-and-such as a prize rather than one that is listed. Or, they have received a particular prize and want to know if they can exchange it for something else? Sorry folks, the monthly prizes that are listed are the prizes that are sent out.

If there are any substitutions made at all, it's when we run out of a specific prize, or the contributor of that prize gave me a limited number, and they were all awarded to previous winners. In other words, the only substitutions that will be made will be at our discretion.

I have also had a few tipsters that have called or written me to say (as much as a year later) that they never received their monthly prize for a tip that was printed. In checking back to the original tip, I have found that they either gave me an incomplete address, moved between the time they sent in the tip, and the time it was printed, or in the case of shipments to another country, the

prize was delayed or mis-routed through customs.

First: If a tipster neglects to include their proper name and complete address on a tip, I can only use the information that I have on that tip to ship any prizes that might be forth-coming. E-mail "handles" and ".com" addresses are useless as shipping addresses. "SKYLOX", "MINIKEY" and "PINNER" @ whatever, may work fine for the net, but this ol' boy needs a real name, and a real address in order to ship all those great prizes that I give away each month.

Include your name and physical address on each tip that you send in. If for some reason you don't receive your prize within six weeks or so after your tip has been printed, let me know.

### ALL LOCK WINNER: TACC II Disconnect

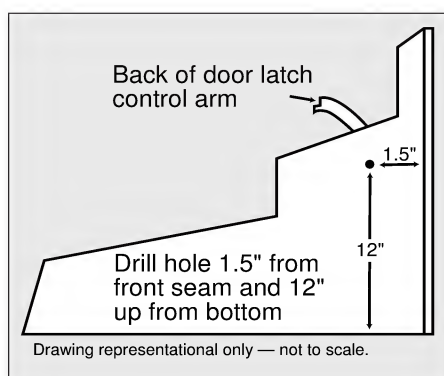
If you have ever been called to open a Tidel TACC II-R, you know that all you have to do is drill a hole in the side and punch the door motor

control arm off of the door locking mechanism. Then reach in beside the left hand envelope drop, and pull up on the door latch with a bent coat hanger and you're in! However, it may not always be necessary to drill and punch.

I received a panic type call from a convenience store where they could not access the interior compartment of their TACC-II. I asked the manager about the history of the unit and he told me it had recently been opened and serviced by their "regular" service company. I suggested that perhaps since the other company had serviced the unit so recently, they might be willing to take care of the current problem. The manager said he had already called them and they would not be able to get to him until late the next day, and he needed in the unit now!

Since the store was close to the house, I told the manager to set the door timer in motion, and I would be there about the time the countdown was complete.





**Illustration 1.**

When I arrived, the door light was on and I punched the button to open it. The motor whirred, but I could not hear the latch retract and the door wouldn't open. I figured that the control arm was malfunctioning and that I would have to drill the unit to open it. Before I drilled, I thought that since the unit had been recently opened (drilled and punched) it might be worth my while to see if the control arm retainer came loose and the arm disengaged from the latch.

I reached down beside the left-hand envelope drop with a hooked wire, snagged the pin on the latch and lifted. Sure enough, the latch moved upward and I could pull the door open! From now on, I think I'll try this little trick before I decide to get the drill out.

Mark Timberlake  
E-Mail

*[Editor's Note: For those of you that have never opened a TACC-II, the drill point is 12" up from the bottom, and 1-1/2" in from the seam where the face of the unit is welded to the sides (see Illustration 1). Drill a 3/8" hole through the outer skin. Once you are through the outer skin, you will be in a space created by a piece of welded angle you will have to hold your drill very steady to maintain a straight drill line from your starting point.*

Once you have the hole through this second barrier, you should be able to see the back side of the control arm just above where it attaches to the latch. The control arm is held on the latch with a star washer. Simply use a screwdriver and a hammer to punch the control arm off of the latch. Then, using a stiff wire with a hook on it, as Mark suggests, insert the wire between the pull down envelope drop (the side closest to the control panel) and reach down with the wire to grasp the pin on the latch and pull up.

When the latch stops, hold the latch up with the wire and use the other hand to pull open the door.]

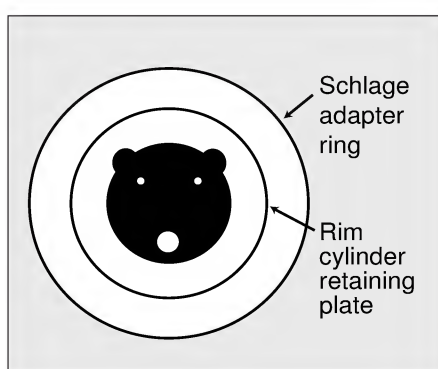
# AERO LOCK TRYOUT KEY SET WINNER: **Correcting Toilet Roll Trash**

I was called to a new restaurant where the manager complained that the key to his back door just spun around and would not unlock the door. The door had a Von Duprin 22 Series exit device with a Von Duprin 210L Pull Handle, and a Schlage rim cylinder.

Suspecting a broken or disengaged tail piece on the rim cylinder, I began taking the panic device off the door. When I pulled the device away from the door, I immediately spotted the problem. The metal door was originally prepped for a standard knob or leverset, and the 2-3/8" crossbore left nowhere for the original installer of the hardware to attach the rim cylinder backing plate. So, believe it or not, they used the tube from a roll of toilet tissue as a spacer to hold the rim cylinder mounting plate in position!

Since the Von Duprin panic bar and pull handle through bolted to each other, the bar and pull handle was secure enough. Unfortunately, after the key had been used a couple of times, the "toilet roll spacer" partially collapsed and the tailpiece backed out of the actuator on the panic bar.

I removed the hardware from the door, and went out to the truck to get a blank mounting plate. As it turned out, I didn't have one to use and had to come up with another idea.



**Illustration 2.**

Looking over what I had on the truck that I might use, I came across a Schlage Adapter Ring (#38-317). That fit into the 2-3/8" cross bore nicely and allowed me to attach the rim cylinder retaining plate and secure it (see Illustration 2). With the exit device and handle through bolted the installation is now as secure as it can be made with a minimum of effort.

John Grimes Wyatt  
E-Mail

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**STRATTEC RACING JACKET:  
Fitting A Kwikset In A Schlage**

A florist had called and said his back door lock was "sticking." The sticking problem was caused by the malfunctioning of an old style Schlage F series knob set with a broken spindle. Unfortunately, I did not have a Schlage F series lock.

I went to my "Save-It-You-Might-Need-It" box and found the only knobset that I had on the van: A Kwikset with a busted latch! I realized that the old Schlage F series and Kwikset, while not interchangeable exactly, did share some similarities.

Especially the way the latch was configured.

It took a little jiggling and wiggling but the Kwikset knob did fit into the older F-series latch and did work! At least it worked well enough to allow the florist to lock the door and gave me a chance to return to replace the knobset with the proper Grade 1 hardware.

Jeanie Morrison  
Kentucky

**HPC PISTOL PICK WINNER:  
Retrofitting I-Core Cylinders**

Several times a year, I am called to a nursing home to rekey all of their

exterior doors. About half of those doors have Sargent fire-rated panic/exit hardware. The rest of the doors have Russwin hardware. Although the job is a profitable one, I usually dread taking down fourteen vertical rod devices to rekey them. That's in spite of the fact that I charge a premium to rekey panic hardware.

I read recently a tip in your column about using I-Core on cabinets and padlocks, and I hit upon an idea.

The next time the nursing home called, I spoke to the administrator and told her that I could save her time and money if she would agree to allow me to install Interchangeable Core cylinders on the panic devices. After showing her how the I-Core system worked, she agreed, even though it meant her staff would have to carry two keys (one for the regular cylinders and one for the I-Core).

I sold her the necessary hardware plus an equal number of spare cores and gave her the control key. Now when I am called to the facilitate, all I have to do is rekey the regular cylinders in the usual manner, go to the office, pick up the fourteen I-Cores that the maintenance department removed and rekey them. No more struggling with the vertical rod hardware!

Glenn Starling  
Florida

[Editor's Note: Glenn, I think your idea was great, but I wonder why you only installed I-Core hardware on the panic devices? Why not go all the way? If it was an incompatibility problem between the hardware brands that were evidently in place (Sargent and Russwin), you might want to take a look at Medeco's KEYMARK Interchangeable Core System. KEYMARK not only allows you to retrofit most six and seven pin Best, Falcon, Arrow, etc., but has single shear line cylinders that will retro approximately 80% of other brands of hardware that you will encounter.]

**SARGENT AND GREENLEAF  
WINNER:  
Steel Door Installation**

I had to install a deadbolt on a steel door the other day, and when I got to the job site, I found that I had left my Squeeze Play Mortising Tool at the shop. Rather than drive the round trip and lose the time necessary to get the Squeeze Play, I decided to improvise.

I drilled my holes (both edge-bore and cross-bore) and set the bolt in the

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**Continued from page 76**

edge bore hole. Then I used a Magic Marker to draw the outline of the bolt's face on the edge of the door

Using a freshly sharpened 3/8" cold chisel, I began to carefully outline the bolt position with the chisel and hammer. By lightly tapping the chisel along the lines that I drew, I began to cause the metal to indent. It took several times around the perimeter of the area to deepen the mortise sufficiently to accept the bolt.

After completing my "mortising," I drilled 3/16" holes where the bolt's anchoring screws would normally go and secured the bolt to the door with pop rivets. Then it was a simple matter of attaching the lock itself to the door in the usual manner.

Although this worked, and I would use it again in a pinch, I would rather make sure that I have my Squeeze Play on the truck the next time.

Donny R. Willis  
Tennessee

**A-1 SECURITY MANUFACTURING  
Magnetic Paint Protectors**

I recently tried to pick a locked door on a 1992 Ford. When I raked the wafers for the second time, my pick slipped out of the keyway and down along the face of the door,

leaving a scratch. Fortunately, my customer did not get upset, and said they were ready to get rid of the car anyway, and not to worry about it.

What I did to prevent this from happening to me again, and possibly having to pay for a new paint job on someone's door, was to go to the local sign shop and ask them to sell me several pieces of magnetic sign material. The guy gave me a handful of scraps!

I cut several pieces into about 3" x 3" squares, and cut a hole about 1-1/4" in diameter in the center of each one. Now before I start trying to pick an automotive door lock, I place one of my "Paint Protectors" on the door. The hole allows me access to the keyway and the 3" x 3" material will prevent me from scratching the paint in the event that my pick slips.

James Whitcombe  
Wisconsin

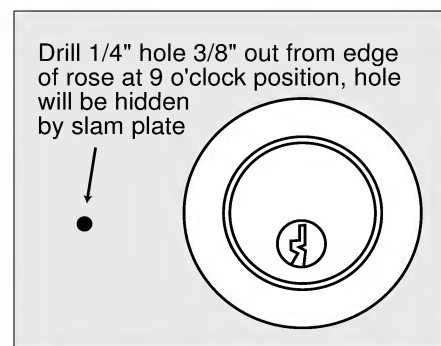
**SILCA KEY BLANKS WINNER:  
Drilling For The Latch**

I received a call that a public restroom door would not unlock. When I arrived I found that the lock was a Schlage F Series. I tried the key, and found that although the cylinder would turn, the latch would not

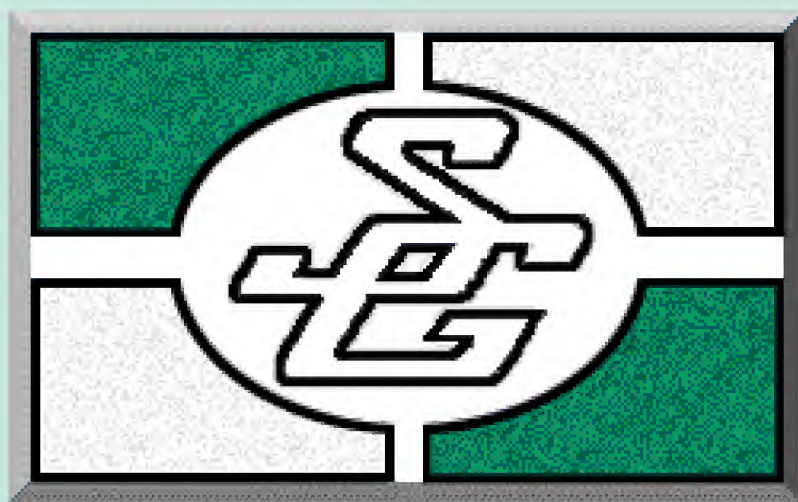
retract. I decided that most likely the lock had separated from the latch somehow.

I was just about ready to drill for the mounting screws (at the twelve and six o'clock positions) when I thought of a better way. A way that would save the customer the expense of a new lockset!

I did drill the lock, but instead of drilling for the retaining screws and ruing the lockset, I moved my drill point about 3/8" out from the edge of the knob's rose and drilled a 1/4" hole straight in (see Illustration 3). I was careful to drill just through the door's skin so I wouldn't damage the lock or the latch with the drill. After drilling



**Illustration 3.**



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the hole, I could see the end of the latch retractor. I used a straight dental pick to manipulate the latch back and pushed the door open!

I disassembled the lock and could not find anything wrong with it other than the retaining screws being loose. Apparently, the screws had worked loose over a period of time and someone came along and yanked on the knob hard enough to cause the lock to slip off the latch. To cover the hole that I drilled, I used a Kwikset scar plate, reassembled the lock and collected my fee from a very happy customer.

Jimmy T. Warden  
E-Mail

**PRO LOCK'S PK-15 PROFESSIONAL  
LOCK PICK WINNER:**

**Altima Under-the-Window Tool**

I had to open my first Nissan Altima about a week ago, which I had no success opening at first. The customer was getting edgy, and I was a little put off myself as I began to look the car over to see how I might be able to gain entry to it. I decided to try my under-the-window tool to see if this might get me in. It did!

The fit was a little tight, but the tool slid under the window and I was able to manipulate the lock/unlock button (which is rather high up on the arm rest) and open the car.

Following this, I had a call to open another Altima, and this one was running. Smug in my new-found knowledge, I whipped out my under the window tool and headed for the same lock/unlock button. Unfortunately, I missed it, and hit the down window button on the drivers side. I came very close to losing a tool and possibly breaking a window! I was able to quickly switch over to the "UP" button and proceed with the opening without doing any damage.

My tip? You can open the Altima with an under-the-window tool, but you have to be very careful not to hit the wrong button!

Marvin Wentworth  
Ohio

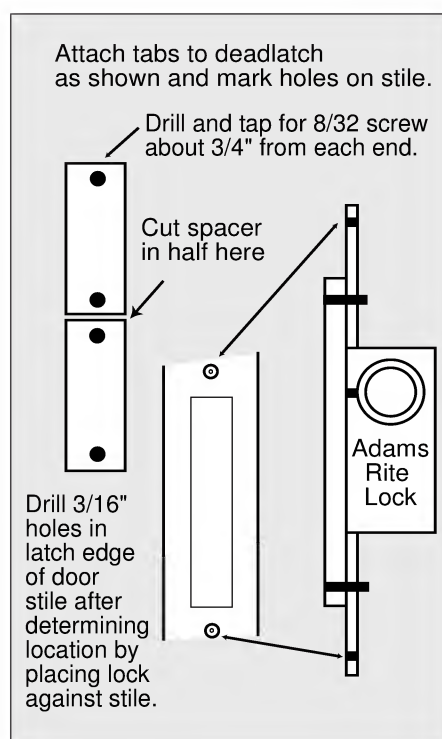
**TECH TRAIN VIDEO WINNER:  
Custom Mounting Tab For  
Adams Rite Installation**

As I was taking an Adams Rite deadlatch unit off the door, the latch fell and I almost lost the latch mechanism down the stile. There was no mounting screws on the unit, it was being held in place with the outside cylinder and the Adams Rite cam on the inside! After checking why it was

mounted this way, I found that the mounting screw holes (at the rear of the stile) were stripped out and useless.

I usually have some Adams Rite bridges on my truck for just such a situation, but this time, I was out. That meant that I was going to have to get creative unless I wanted to do a round trip to the shop and back.

What I did find was some scrap 1 x 6 x 1/4" aluminum spacing material. I cut one of these in half and made some very functional mounting tabs from the two pieces (see Illustration 4).



**Illustration 4.**

After cutting the spacers in two, I drilled, and taped an 8" x 32" hole about 3/4" from each end of the two pieces. I mounted the deadlatch to each of the tabs just as if they were already in the door. Next, I turned the deadlatch facing the prep for the latch on the stile, and pushed it as far into the hole as it would go. This allowed me to use a Magic Marker to mark the drill sites for the holes at the top of one tab, and the bottom of the other.

I drilled these holes to accept the #8 screw and used a 3/8" drill bit to counter-sink the hole so the head of the screw would be flush with the face of the stile.

The next step was to place each tab so the tapped hole in the tab would line up under the hole that I just drilled in the stile. I inserted the screw and just "started" the screw on top.



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The one on the bottom I snugged so that the tab would not turn and perhaps slip down into the stile. Next I placed the new deadlatch in position and started the retaining screws just tight enough to hold everything in place while I checked to make sure that everything was lining up properly.

Going to the top tab's mounting screw, I gave it a liberal dose of red Thread-Tight and did the same thing with the top mounting screw on the deadlatch. I backed off the bottom tab's mounting screw and "dosed" it with "Red" also and tightened it down firmly. Ditto for the bottom deadlatch mounting screw. Then I simply put the rest of the hardware back in place and left the job-site knowing that the new deadlatch was securely mounted to the door.

Charles Gray  
North Carolina

**MAJOR MANUFACTURING WINNER:  
Glue Stick Fix**

Sometime ago, I read a tip about using a two part stick epoxy and how versatile, and useful it can be to locksmiths. It comes in a single stick from plumbing supply houses and automotive parts stores.

After having bought some at a

home center, I have found numerous uses for the stuff. However, my favorite is as a quick fix for screws in strike plates on wooden door frames.

You know how on older frames, the mounting screw holes can be wallowed out and the screws just won't hold anymore? Well, just take a small amount of the epoxy, knead it until it turns a uniform gray color and force some into the screw holes.

Then, simply put the strike in place and push the screws into the epoxy. Wait about fifteen minutes and the repair is permanent.

Sharon Wells  
New Mexico

**THE SIEVEKING AUTO KEY GUIDE  
WINNER:  
Pilot Hole Drilling**

I install several Mag Uniforce door edge guards on the newer type residential doors with a metal skin over a foam core. The stiles of these doors are wood, and the stile protruded out beyond the edge of the sheeting about a quarter of an inch.

I placed the first Uniforce on the door and set the two short latch screws, I didn't realize what was going to happen as I tried to drive the longer top and bottom screws into place. The stile

SPLIT! And, I mean it split about halfway up the door from the top of the latch!

I called the customer in and showed him what had happened and told him that I thought I could effect a suitable repair with some epoxy and paint, but would be willing to do whatever was necessary to rectify the problem for him. He agreed to let me try the repair which he accepted when it was done.

On the next door, I decided to drill a 3/16" pilot hole before I used my screw gun to drive the longer screws in place. I drove the screws in very, very slowly. When that stile didn't split, I repeated the process on the rest of the doors.

From now on, I'm going to make it a habit to drill pilot holes on any wood door edge that I'm installing a lock on. I think it's good insurance.

Pete Journigan  
E-Mail

**JAKE'S GRAB BAG PRIZE WINNERS:  
Fender Washers Fix Alignment  
Problem**

I was mounting a Yale door closer, and was using Grommet Nuts, and machine screws to through bolt the closer to a metal door. For whatever reason, when I drilled my 1/4" hole through the door from the inside, the hole on the outside was out of alignment. Even when I enlarged the outside hole to accept the Grommet Nut, the hole was still too far out of alignment to have the machine screws fit.

To correct the problem, I made a quick trip to the nearest hardware store where I bought four 1-3/4" fender washers. These had a 3/8" hole in them which would accommodate the Grommet Nut. I went back to the job-site and enlarged the 3/8" hole to 5/8".

The fender washers hid the oversized holes and with the Grommet Nuts in the center of the fender washers, it looked like it was planned that way.

Pete Gamble  
North Carolina

**Armor-All Clean-Up**

While cleaning my truck the other day, I was using Armor-All to clean the padded dash. When I finished inside the truck, I decided to try the Armor-All on the vinyl lettering on the truck since it had faded over the years.

I mean to tell you that the vinyl looks brand-new! It looks as if I had just had my truck re-lettered.

Tony Iannuzzelli  
New York

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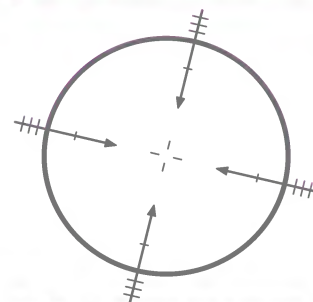
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# ARROW-ing in on



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***The maintenance director showed me a narrow stile glass door with a concealed rod panic device, that had been a maintenance, and security headache for the company ever since the building had been new.***

I am what you call an "opportunist" who doesn't hesitate to tackle the unconventional and non-traditional aspects of locksmithing. I call it "filling a need." So, when one of my regular customers called me to help solve a door security problem, I didn't hesitate to get in the old green lizard (my ancient, cold-natured, green Dodge van) and headed off to find out what kind of "opportunity" was knocking on my door.

The maintenance director showed me a narrow stile glass door with a concealed rod panic device, that had been a maintenance, and security headache for the company ever since the building had been new. It seems folk's were using that door to exit the building — sometimes with company property - to smoke, take an unauthorized break, or use it as a

short cut to the parking lot. In addition, to make it easier to enter through the door from outside, employees would stuff paper, chewing gum and other debris in the rod receptacles — both top and bottom — to prevent the door from locking.

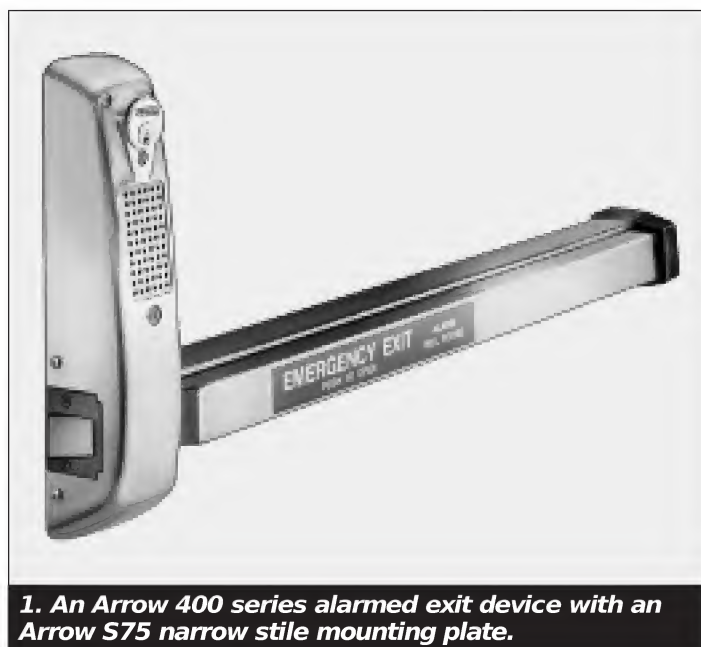
Since the maintenance director, the company manager, and the local fire marshal had already talked about how the state frowned on exit doors being blocked, padlocked, screwed shut and boarded up, I was called in to offer a solution that would keep everyone except the employees happy.

My solution was to suggest an Arrow 400 series alarmed exit device with an Arrow S75 narrow stile mounting plate (see Photograph 1). That was easy and pretty straightforward. What made the job somewhat unconventional was the fact that I

would have to disable, or remove the existing concealed rod exit hardware. I opted to remove it. The removal of the old device was complicated by the necessity of having to take the door down to remove the bottom section of the concealed rod assembly.

This door had a header mounted door closer which needed to be removed. It is not necessary to remove the entire closer, just take off the arm. Next the hinge screws need to be removed to drop the door. These doors will normally use either standard hinges or top and bottom pivot hinges.

Before removing the hinge screws, wedge a block of wood, cardboard, or similar cushion absorbing material under the door to prevent it from falling when the hinge screws are removed (see Photograph 2). Loosen

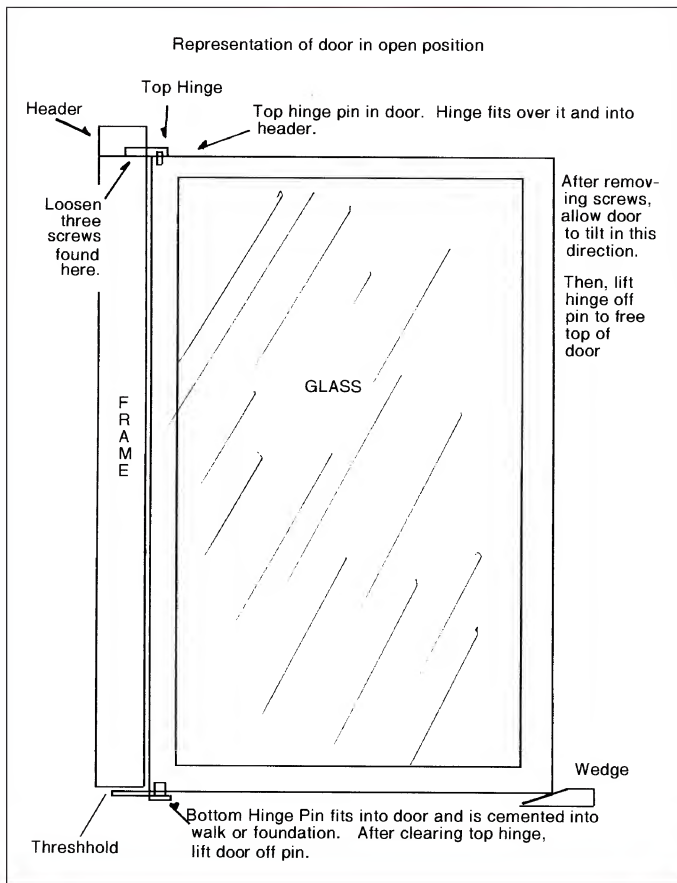


**1. An Arrow 400 series alarmed exit device with an Arrow S75 narrow stile mounting plate.**

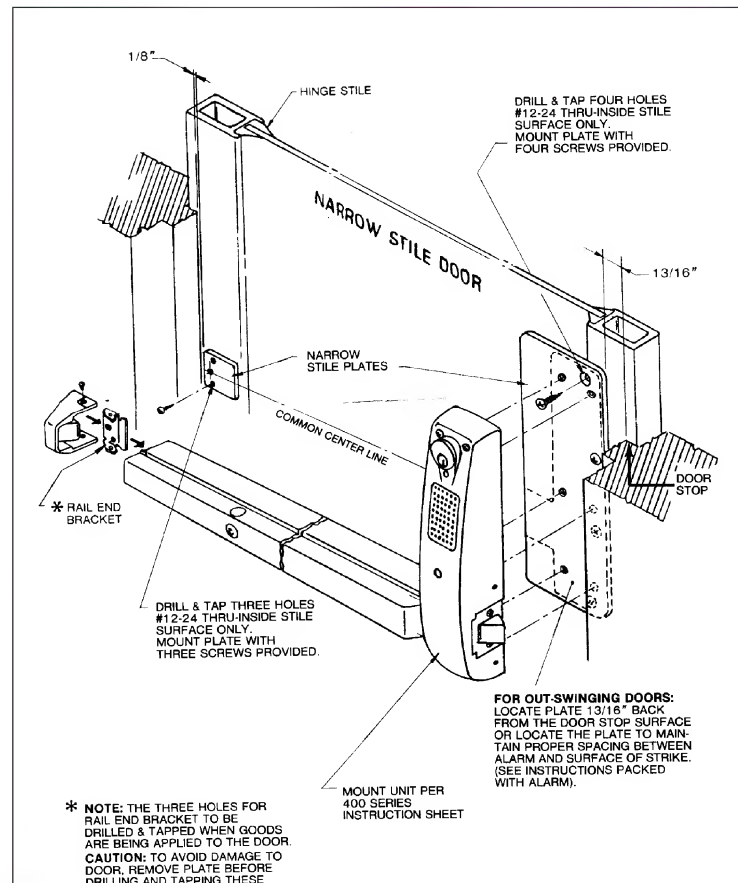


**2. Wedge a block of wood, cardboard, or similar cushion absorbing material under the door.**





**Illustration A.** Once that screw is removed, the door can be taken down.



**Illustration B.** Product installation instructions.



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the hinge screws until the door settles, then slowly remove after making sure your wedge is secure or a helper has a good grip on the door.

Once that screw is removed, the door can be taken down by removing the wedge and allowing the door to tilt

outward slightly (see *Illustration A*). This action will pull the top hinge out of the header and allow you to lift the hinge up and off the door pin. Now just lift the door off the bottom pin and set it aside to do whatever service work you need to perform. In this case

removing the bottom portion of the vertical rod assembly.

Although I do regularly take down narrow stile doors by myself, I strongly recommend that you use a

**Continued on page 87**



**3. The first thing that is required is to install the Arrow S-75 narrow stile mounting plate.**



**4. The hinge side of the Arrow S-75 mounting plate assembly attached to the door frame.**



**5. To prevent the strike from being moved or knocked out of alignment I install a third screw.**



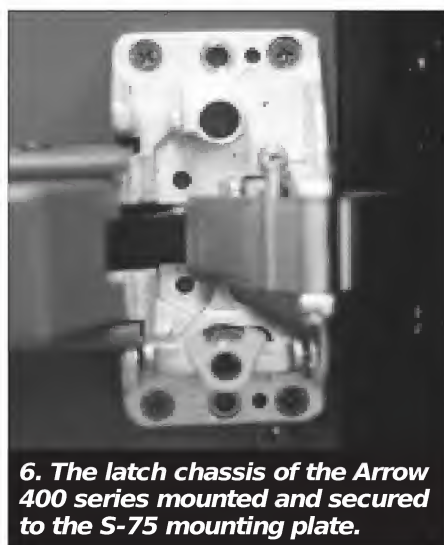
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**Continued from page 84**

helper. If you do not have a helper, then don't try this procedure by yourself on a windy day! You can imagine the potential consequences.

Okay! The door has been taken down, the bottom portion of the vertical rod assembly removed, and the door re-installed. Now let's see how the Arrow 400 series alarmed exit device mounts on a Herculite or narrow stile glass door. The product installation instructions are shown in *Illustration B*.



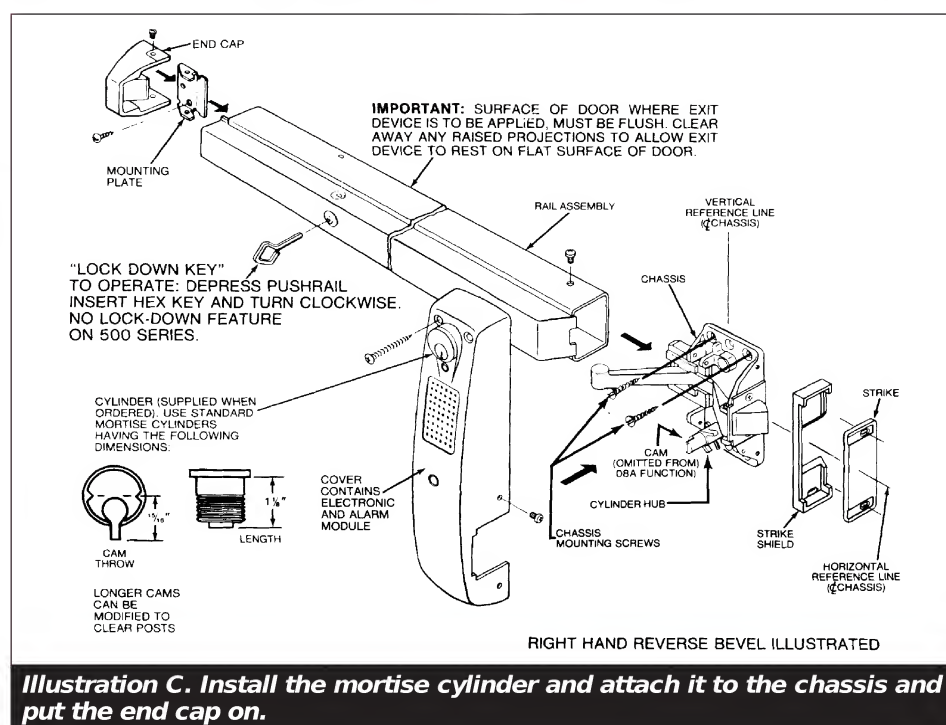
**6. The latch chassis of the Arrow 400 series mounted and secured to the S-75 mounting plate.**

The first thing that is required is to install Arrows S-75 narrow stile mounting plate shown in *Photograph 3*.

*Photograph 4*, shows the hinge side of the Arrow S-75 mounting plate assembly attached to the door frame. I painted the mounting plate to help

make the steel plated screws blend in a little better with the Duronodic finish of the door.

*Photograph 5*, is the installed strike. The third screw near the center is one that I place on all my panic exit devices to prevent the strike from



**Illustration C. Install the mortise cylinder and attach it to the chassis and put the end cap on.**



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being moved or knocked out of alignment. I have found this little trick to be helpful in preventing unnecessary call backs. I think it would be a great idea if all panic/ fire exit device manufacturers incorporated such a provision with all their products.

Photograph 6, shows the latch chassis of the Arrow 400 series mounted and secured to the S-75 mounting plate. The mounting plate offers a solid foundation for the Arrow 430 alarmed panic device to mount on a narrow stile door. You can use this same plate to mount Arrow's 300 series exit alarms to narrow stile doors.

The only thing left to do is install the mortise cylinder in the alarm cover and attach it to the chassis and put the end cap over the end of the device (see Illustration C).

Doing the installation myself took about four hours. That time included taking down and re-installing the door and about an hour's driving time to get to the job site. Call it six hours labor with the round-trip drive factored in. Now multiply six hours by your normal hourly rate and add to the figure material cost and gross profit. Now add in your service call and any other incidental charges that you might levy that would be applicable to an installation like this. What's your total? Not bad for six hours work, right?

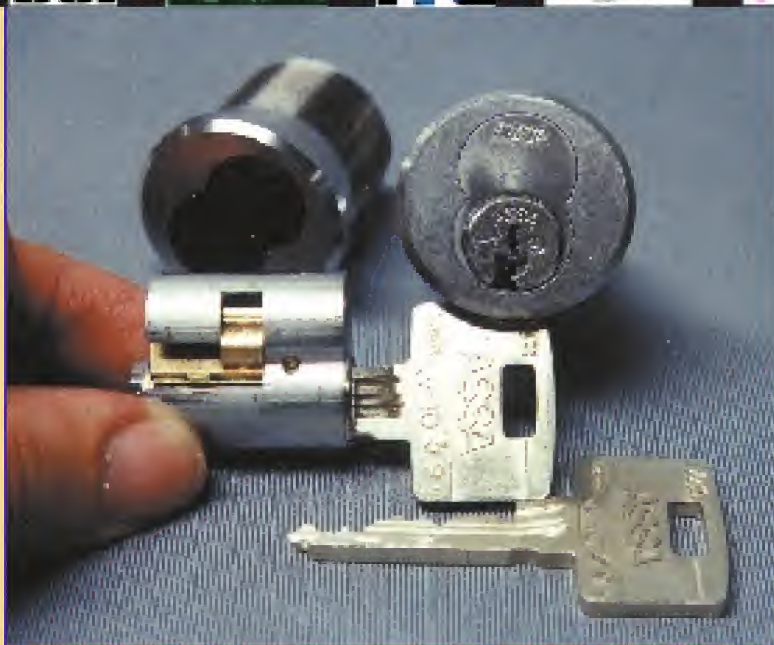
The great thing about this kind of work is that it is just sitting out there waiting for those willing to take advantage of the opportunity when it presents itself. After all, that's what an opportunist really is, isn't it? Believe me, the opportunities for installing panic hardware, door closers and other ancillary hardware are to be found in virtually every business you work in. You have to let your customers know that you can fill a need if they have it. It's up to you to recognize the need and be ready to offer a solution to fit that need.

Now, go back to the figures that you wrote down a little while back. Look them over real good and tell me how many car openings or residential rekeys would you have to do - in a days time - to equal what you could net from one installation like this one?

Y'all heah what I'm sayin' now?



**A**SSA first introduced a removable core lock four years ago, in the middle of 1993. In the original design, the relationship between the operating, and/or master keys, and the control keys often made it difficult — or in some cases impossible — to integrate a removable core cylinder into a previously created standard ASSA system. From then until now, ASSA engineers proceeded to redesign it to reduce those built-in limitations. The end result is the new ASSA interchangeable core.



**1. The old and new ASSA IC housings and cores.**

### THE ORIGINAL DESIGN REMOVABLE CORE

*Photograph 3*, shows an original design ASSA IC core. If you compare it to the new design (shown in *Photograph 1*), you will see that it is considerably different. In *Photograph 3*, the control sleeve takes up the space of three pin chamber positions. If you think back to the cutout (for the locking lug) inside the housing, you will realize that the wide slot was originally designed to accommodate the width of the original core's locking lug.

Most different types of interchangeable core locks rely on a secondary shear line to operate a locking lug. A specially cut control key operates that secondary shear line to allow for insertion or removal of different cores. The operating keys make use of the standard shear line for the purpose of locking or unlocking the device attached to the IC housing. The relationship (if any) of the operating keys to the control keys is based on the physical operation of the control sleeve, and the tumblers within.

The ASSA lock is of Swedish origin, and as such uses a somewhat different point of reference for pin chamber or key cut positions. For most American designed locks, the first to the last pin (or key cut) positions are referenced from the face of the plug to the rear of the lock cylinder. For a six pin lock, the pin chamber closest to the plug face would be considered the first pin chamber, and the one at the back would be considered the sixth pin chamber. For ASSA, those positions are reversed. The pin chamber at the back would be the first, while the chamber closest to the face of the lock is the sixth pin chamber.

With that point of reference in mind, look again at *Photograph 3*. The control sleeve extends from

# ASSA's New Version IC Lock



by  
**Sal Dulcamaro, CML**

*Photograph 1*, shows two sets of ASSA IC housings and cores. With the traditional "figure 8" profile, one core and housing is assembled while the other set is apart.

In *Photograph 2*, you can more clearly see inside the IC housing. Toward the middle, on the left inside surface, a cavity is visible. That cutout accepts the locking lug that is part of the control sleeve for an I-Core. It is not immediately apparent, but the locking lug (for ASSA's new IC) is not as wide as the cutout.



**2. That cutout in the cavity accepts the locking lug that is part of the control sleeve for an I-Core.**



the second pin chamber position to the fourth position. Positions 1, 5 and 6 can only access the standard shear line. Positions 2, 3 and 4 can access both the standard shear line and the secondary shear line of the control sleeve.

The original design ASSA core did not make use of build up pins to access the secondary shear line. The control sleeve thickness was the equivalent of four depths. By cutting a key four depths shallower than an operating key in the 2, 3 and 4 positions, a control key would raise the bottom pins in those three chambers high enough to access the secondary shear line to draw in the locking lug. Rotating clockwise, the control sleeve's motion is limited. It turns just far enough to draw in the locking lug for insertion or removal of the core.

Those four depths were the reason that integrating a removable core into a previously prepared set of ASSA locks was often difficult. If operating, or master keys were less than four depths deeper than the shallowest possible key depth in the 2, 3 or 4 positions, it would be physically impossible to create a control key to pull the core. In a newly created



**3. An original design ASSA IC core.**

system, of course, the depth variation would have been taken into account. In an older system, they would not have been planned for that depth variation.

The other drawback of the earlier core design was the possible use of number 4 master pins in all three control sleeve chamber positions. If that was the case, it would be technically possible for a key to access both shear lines simultaneously. In such a case, a lock malfunction could occur because the control sleeve might or might not move.

Now when properly set up for new locks, none of the previously mentioned problems could occur. Those reasons alone probably had no bearing on the effort to redesign the ASSA core. The most likely reason for

the change in design was the limitation in the size of a master key system when using the original core design. It couldn't do everything that standard ASSA lock cylinders could do. The new design corrects that, giving the new IC virtually unlimited master keying capabilities.

### **GENERAL INFORMATION**

Before I go into the technical details of the redesigned ASSA interchangeable core, I will briefly review some basic information regarding ASSA locks in general. Earlier in this article, I mentioned that components of an ASSA lock or key are viewed from a different point of reference, with which many of us would not normally be familiar. The pin chambers are sequenced back to front, as are the key cuts tip to bow. Some things that might be a bit more confusing are how the key cut depths and the bottom pin lengths are identified.

ASSA uses nine different bottom pin lengths and nine corresponding key cut depths. Many of us would probably presume that the number 1 size bottom pin is the shortest and the

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**4. An ASSA V10 new style interchangeable core.**



**5. The control key has been rotated clockwise which retracts the locking lug.**

number 9 bottom pin is the longest. Likewise, it would seem logical that the number 1 key cut depth was the shallowest, while the number 9 depth was the deepest. It is exactly the reverse. Number 1 is the longest bottom pin and number 9 is the shortest. Similarly, number 1 is the deepest key cut depth and number 9 is the shallowest. These reversed numbers will be very important later on when I explain the pin stacks.

The increment between depths is identified as .024 inch, but that is actually a rounded off number. The

original Swedish standard is a metric measurement of .6 millimeters, which is the equivalent of .023622 inch. The pin diameter is approximately .114 inch, just a hair under the standard .115 inch used for most American made commercial pin tumbler locks. The original metric dimension (as closely as I can determine) is 2.9 mm for the pin diameter.

The ASSA Twin 6000 and the more recent Twin V10 lock cylinders, are high security cylinders which meet the UL437 standard for pick and drill resistance. The lock is a hybrid

composite which is part pin tumbler lock and part sidebar lock.

### **THE NEW IC**

Photograph 4 shows an ASSA V10 new style interchangeable core. The control sleeve runs from the first to the fourth pin chamber positions (relative to the back of the lock). The locking lug is in the extended position. In Photograph 5, the control key has been rotated clockwise which retracts the locking lug to allow insertion or removal from the housing. A right hand side view can be seen in Photograph 6. Four finger like

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**6. Four finger like extensions on the control sleeve limit the rotation of the control sleeve.**

extensions on the control sleeve limit the rotation of the control sleeve when the locking lug is retracted.

The same view is shown again in *Photograph 7*, but with an operating key instead of a control key. Using the operating key to rotate the plug in *Photograph 8*, the four pin chambers that are in line with the control sleeve are visible just below the finger like endings of the control sleeve.

*Photograph 9*, shows a top view of the core with the slide cover partially slid open. The slide cover is not staked down, so the new ASSA I-Core will allow changing of the pin tumblers without removing the plug. The control and operating keys are shown in *Photograph 10*. The control key is at the top with the key bitting: 8-6-7-7-5-8. The operating key is at the bottom with the key bitting: 1-2-6-6-5-8. Remember that ASSA key cuts are listed tip to bow. The side millings are identical for both keys because they operate the side pins which operate the custom sidebar for the lock cylinders.

The pin chambers have been unloaded from the core in *Photograph*



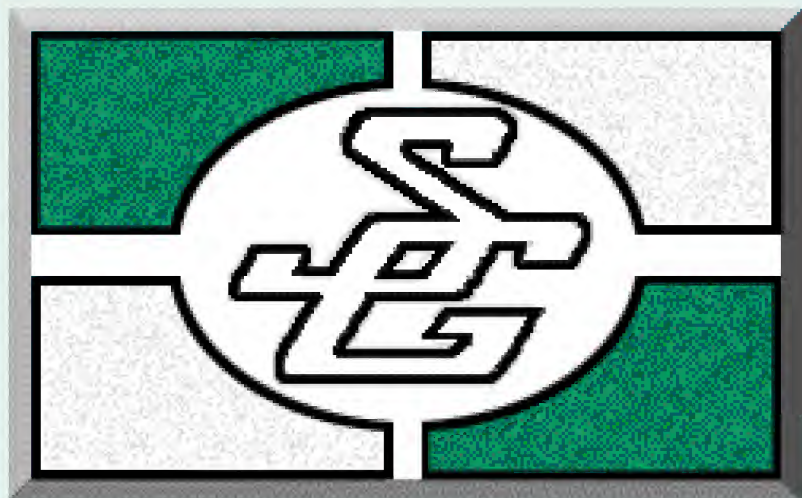
**7. An operating key instead of a control key has rotated the core.**

11. The core was not master keyed. The pin chamber positions are identified left to right (from the back of the core to its face) as positions 1, 2, 3, 4, 5 and 6. There are three pins for each of the first four chambers. The last two chambers had only two pins. The bottom pins, in order from the first to the last chamber positions are: 126658. Remember that a number 1 size bottom pin is long and a number 8 size bottom pin is much shorter. The bottom pins exactly match the operating key cuts. When the operating key is inserted into the lock, the top surfaces of all the bottoms pins

reach the regular shear line for normal lock operation.

The pins in the middle of the stacks for the first four pin chamber positions are not master pins; they are build up pins. They are designed to add to the bottom pin height to reach the secondary shear line when the control key is used. When the control key is turned, the control sleeve moves to pull the locking lug inward to insert or remove a core.

Since the control sleeve only runs from the first to the fourth pin chambers, the last two chambers only



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**8. The four pin chambers that are in line with the control sleeve.**

use the regular shear line. That explains why the last two chambers only had two pins per chamber, a top and bottom pin each. That is also the reason that the last two cuts on both the control and operating keys are: 5-8.

Pinning rules are different between the control sleeve chambers and the last two chambers that don't run through the control sleeve. In a non-master keyed cylinder (such as our current example), control sleeve chambers will have three pins each: a bottom pin, a build up pin and a top pin. The stack height in each of those

chambers will be a constant value. The last two chambers will only have a bottom pin and a top (spool driver) pin. Those chambers will have an approximately even pin stack.

A master keyed cylinder will work nearly the same, except that we will require an additional pin (specifically, the master pin) in each chamber that is master pinned. If we have a core that is master pinned in every chamber, the rule is as follows. The control sleeve chambers (positions 1, 2, 3 and 4) will have four pins each: a bottom pin, a master pin, a build up pin and a top pin. Like the non-master keyed cylinder, each pin stack height will have the same constant value. The last two chambers (positions 5 and 6) will have three pins each: a bottom pin, a master pin and a top (spool driver) pin. Also, like the non-master keyed cylinder, those chambers will have an approximately even pin stack.

The new pinning requirements have created the need for a modified top pin design. There are nine new top



**9. A top view of the core with the slide cover partially slid open.**

pin sizes, numbered 2 through 10. Photograph 12, shows the partially hollowed out top end of one. A special smaller sized tumbler spring fits inside the top pins for the control sleeve chambers (see Photograph 13).

### **CORE CONSTRUCTION**

Although the regular pin tumblers can be top loaded for keying up an I-Core, you must still remove the plug to install the (dealer custom) sidebar. Photograph 14, shows a V10 plug without a sidebar installed. The side pins can be viewed through the slot where a sidebar would normally be installed.

A bottom view of the plug, in Photograph 15, shows the five side pin chambers. The key is the only thing

*Continued on page 96*



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Continued from page 94



**10. The control and operating keys for the ASSA IC lock.**

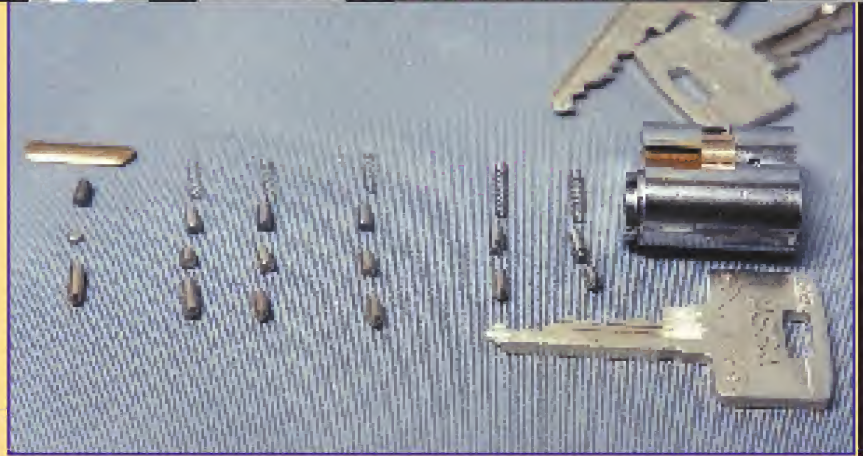
that prevents the side pins from coming out. A loose plug should always have a key or key blank inside to contain the side pins.

With the plug removed from the core, *Photograph 16*, reveals the inside layout of the pin chambers. The two chambers toward the front are not part of the control sleeve, while the four chambers toward the back are within the control sleeve. *Photograph 17*, shows the core fully disassembled. A top view of the control sleeve, in *Photograph 18*, shows the four pin chambers that run through it and the locking lug that secures a core inside a housing.

*Photograph 19*, shows the thickness of the control sleeve. It is nine depth increments (9 times .6 mm) thick, which is 5.4 mm. Its equivalent measurement is approximately .2125 inch, or rounded off to .213 inch.

#### **THE PINNING FORMULA**

Every so often, I have the fortune to write an article about a completely new product. In many of those circumstances, I have had only a working model of the lock, and virtually no printed technical information from the manufacturer. That's generally because the product (at the time I was writing the article) was not yet ready for public release,



**11. The pin chambers have been unloaded from the core.**

even though I was privy to the product early.

So was the case with this new ASSA IC lock. I will first indicate the information given to me by ASSA, and then I will proceed to fill in the missing pieces.

The original ASSA removable core (RC) design will be discontinued, and it will be replaced by the newly redesigned interchangeable core (IC) product. The new cores will fit into the original design housings. The new IC offers full compatibility with standard ASSA cylinders, whereas the original RC was not. The new IC can also be integrated into systems previously set

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**12. There are nine new top pin sizes with hollowed out tops.**

up for the original RC design. So even though the product line will be discontinued, it will not be orphaned.

The new IC has a control sleeve in the first four pin chambers (also indicated earlier) and pinning for those chambers is calculated with specific formulas to determine the top and build up pins in each pin stack. The top pin (TP) is determined from the control key cuts for the chambers within the control sleeve. The last two chambers use standard coding rules to determine top pins. For the control sleeve chambers, just add 1 to the bitting of the control key to determine the top pin size for the corresponding pin chamber. The formula is as follows:

$$\text{Top Pin (TP)} = \text{Control Key (C)} + 1$$

The bottom pin (BP) and master pin (MP) sizes are determined the normal method used by other ASSA locks. The build up pin (BUP) is the only other new component to deal with in the control sleeve chambers. ASSA provides the following formula

to determine that:

$$\text{Build Up Pin (BUP)} = 20 - \{ \text{Top Pin (TP)} + [10 - (\text{Bottom Pin (BP)} - \text{Master Pin (MP)})] \}$$

If any chambers are cross keyed, there will be more than one master pin in the particular chambers. The total of the master pins would have to be included in the above formula, in those circumstances. The last two chambers are treated like any standard ASSA cylinder chambers. There is only one shear line, so there are no build up pins. Master keying and master pins in those chambers follow standard ASSA rules.

The new product uses nine new top pins numbered 2 through 10. Those pins have a slight recess drilled into them to accept the new smaller diameter driver springs. These top pins and springs must be used in all control sleeve chambers. There are also nine new master pin lengths that are numbered 9 through 17. These new lengths are only used as build up pins, while some of the original master pin sizes (numbered 1 through 8) can be used as either master pins or build up pins.

Now I'll try to fill in some other pieces of information. First I'm going



**13. A special smaller sized tumbler spring fits inside the top pins.**



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**14. A V10 plug without a sidebar installed.**



**15. A bottom view of the plug shows the five side pin chambers.**

to list the pin lengths. I will not deal with the side pins which interact with the side milling cuts on the keys and operate the sidebar. I will only explain the regular pin tumbler style pins.

The actual pin lengths for the original or new pins don't seem to be documented anywhere accessible. At least I've never seen them if they do exist. It took a bit of work, but through measurement and approximating original metric dimensions, I think I

have a fairly accurate listing of pin lengths. I figured this on my own, so I can't guarantee that these dimensions are used by ASSA in Sweden. All I know for certain is, if they're not exact, they are at least within a thousandth or two of the actual dimension. I will list the dimensions in both metric (as millimeters) and inch equivalents rounded off to the nearest thousandth of an inch. Remember that these are my figures. ASSA may list

them differently.

As closely as I can determine, the standard pin diameter is 2.9 mm or .114 inch. That diameter dimension should apply equally to bottom, top, master and build up pins. The increment of each step variation between depths is .6 mm or .023622 inch. Rounded off, the step variation is .024 inch. The following charts list pin lengths.



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16. The inside layout of the pin chambers.



17. The core fully disassembled.



18. The four pin chambers that run through it and the locking lug.



19. The thickness of the control sleeve is nine depth increments thick.



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### Bottom Pins

PIN SIZE	METRIC (MM) DIMENSION	INCH EQUIVALENT
1	8.8	.346
2	8.2	.323
3	7.6	.299
4	7.0	.276
5	6.4	.252
6	5.8	.228
7	5.2	.205
8	4.6	.181
9	4.0	.157

### Original Style Top Pins

(Spool Drivers- not for Control Sleeve Chambers)

PIN SIZE	METRIC (MM) DIMENSION	INCH EQUIVALENT
1-2	4	.157
3-4	5	.197
5-6	6	.236
7-8-9	7	.276

### Master/Build Up Pins

PIN SIZE	METRIC (MM) DIMENSION	INCH EQUIVALENT
1	.6	.024
2	1.2	.047
3	1.8	.071
4	2.4	.094
5	3.0	.118
6	3.6	.142
7	4.2	.165

8	4.8	.189
9	5.4	.213
10	6.0	.236
11	6.6	.260
12	7.2	.283
13	7.8	.307
14	8.4	.331
15	9.0	.354
16	9.6	.378
17	10.2	.402

Master pins will only use the sizes 1 through 8 above. Build up pins can range anywhere from 1 through 17. The difference between the operating and control key cuts determines that.

The new style recessed top pins are numbered 2 through 10. As far as I can determine, those nine sizes of pins match up with master/build up pins for length. You should probably use the equivalent numbers 2 through 10 on the above chart to determine the lengths. They cannot be substituted, however, because a number 7 master pin or top pin might be the same length, the top pin has the recessed end while the master pin does not. The top pins that I checked had a recess dimension (the tumbler spring fits inside the recessed surface) of about .060 inch deep. That dimension may or may not apply to most sizes of top pins. The number 2 pin, if it is .047

inch thick, obviously can't have a .060 inch recess in it.

Much earlier I had mentioned that the control sleeve was just under .213 inch thick. That is equivalent to nine depth increments. That dimension is significant. The length variation between a number 1 (longest length) ASSA bottom pin and a number 9 (shortest length) ASSA bottom pin is roughly .189 inch. The control sleeve is exactly one increment thicker than that dimension. What that means is that the combination of the longest possible ASSA (number 1) bottom pin lifted up by the shallowest ASSA (number 9) key cut depth will not reach the secondary shear line. Only with a build up pin on top of a bottom pin can the control shear line be accessed. Because of that, the new IC can use all possible key cut combinations for master keying as do standard ASSA locks.

I've devised my own formula variation to determine the size of build up pin to use in a control sleeve chamber. It will work with either master or non-master keyed IC



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cylinders. For each chamber position, first find the deepest operating cut. If the cylinder is not master keyed, the operating key cut depth is the deepest operating cut (DOC). If the cylinder is master keyed, compare the top master key (TMK) and the change key for the particular cylinder. Whichever key has the deepest cut (between those two keys) will determine the DOC.

Remember that the deeper cut for ASSA will have a smaller number. A number 3 depth is deeper than a number 7 depth.

Next you should determine the control key cut (CKC). We'll use the keys from *Photograph 10*, as an example. I would still use the top pin formula as is, because it is so simple. My modified formula to determine build up pins is as follows:

**Deepest Operating Cut (DOC) - Control Key Cut (CKC) + 9 = Build Up Pin (BUP)**

I'll try it with all four control sleeve chamber positions, starting with the first. For the first position:  $1 - 8 + 9 = 2$ . Second position:  $2 - 6 + 9 = 5$ . Third position:  $6 - 7 + 9 = 8$ . Fourth position: (same as third)  $6 - 7 + 9 = 8$ .

Using the original formula to determine the top pins ( $TP = C + 1$ ), gives us the following. First position:  $TP = 8 + 1$ ;  $TP = 9$ . Second position:  $TP = 6 + 1$ ;  $TP = 7$ . Third position:  $TP = 7 + 1$ ;  $TP = 8$ . Fourth position:  $TP = 7 + 1$ ;  $TP = 8$ .

I earlier determined the bottom pins to be: 1-2-6-6-5-8. Since the last two chambers are not in line with the control sleeve, the top pins (spool drivers) for those two chambers will be determined like any other ASSA lock cylinder. A number 5 bottom pin takes a 5-6 spool driver, and a number 8 bottom pin takes a 7-8-9 spool driver. The chart below will list the pin stacks in all six pin chambers:

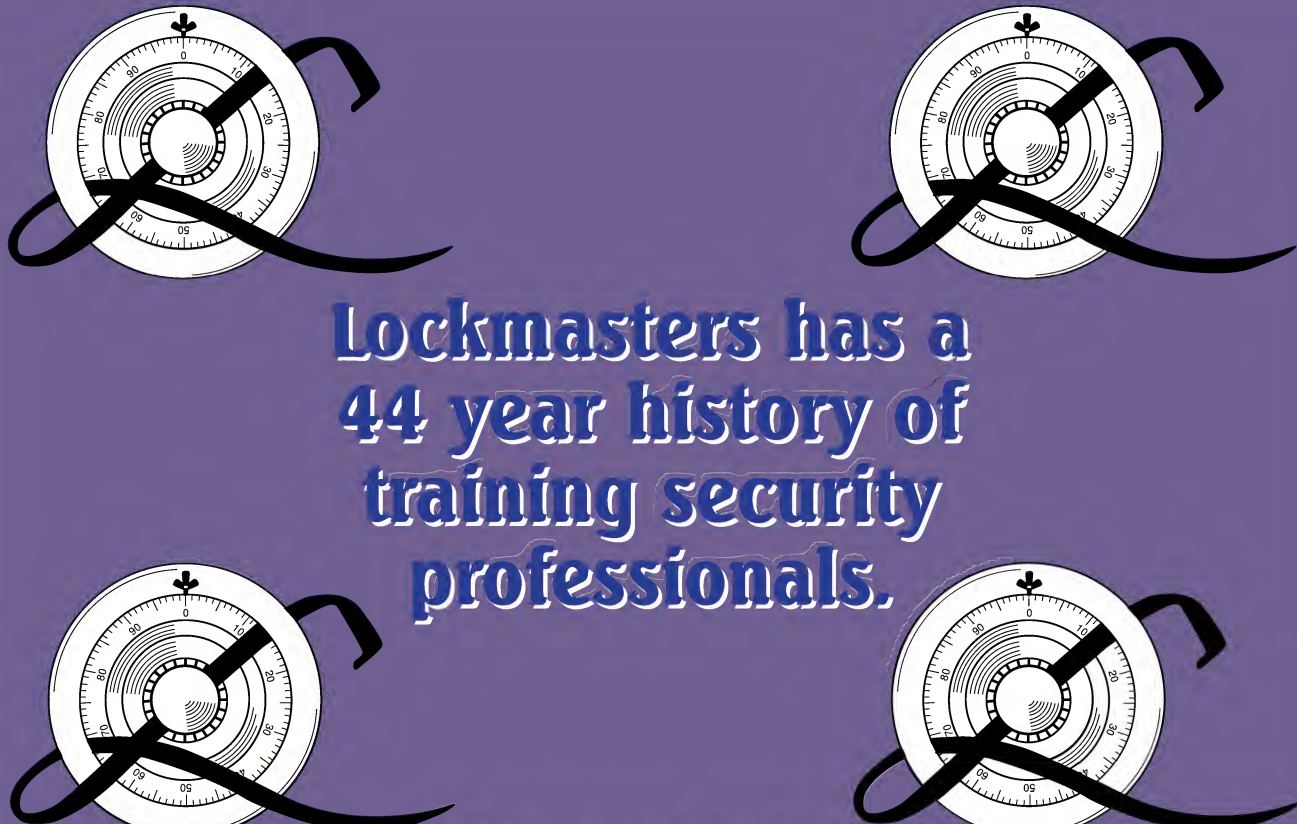
	1st	2nd	3rd	4th	5th	6th
TP	9	7	8	8	5-6	7-8-9
BUP	2	5	8	8	None	None
BP	1	2	6	6	5	8

The constant pin stack only applies to control sleeve chambers. The total pin stack in each of those chambers should be 20. I know if your adding each stack now, you're thinking that either I or you are mathematically challenged. The numbers don't add up. Much earlier I explained that

ASSA bottom pins are numbered backwards compared to the way most of us are familiar. That backwards numbering system plays havoc on adding the pin stacks. To make our stacks add up properly, we must convert the bottom pin sizes. That is done by subtracting the actual bottom pin size from the number 10. This only applies to the four control sleeve chambers. The last two chambers should not add up to 20. Doing that gives us converted bottom pin numbers as follows: 9-8-4-4. With those numbers in place of the bottom pin numbers for the first four chambers, every stack now adds up to 20.

If the cylinder had been master keyed, we would have determined the bottom and master pin sizes first. Then we would have figured the build up and top pins. Interchangeable core lock coding can always be a bit tricky. With a little bit of practice (and getting used to ASSA's reverse numbering), ASSA's IC can actually be quite easy to work with.

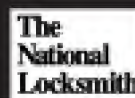
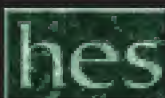
For more information contact ASSA at: 718-257-4700. **TNL**



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# Barnyard Noise!

*We can continue to cry out, and beat our chest only to realize that no one really cares other than ourselves. This may be unfortunate, and unfair, but nobody said life was fair.*

*by Tom Lynch*

**T**he chicken coop was warm and bustling with activity. "Buk, Buk, Buk Buk, Buk" -- chirped Clara the chicken as she laid her daily basket of eggs.

"Why do you always lay more eggs than the others do?" asked Notto the rooster.

"I'm a special chicken" clucked Clara. "I've been USDA approved!"

"So what?" sang out Notto the rooster.

"So what! This means that I am recognized as premium stock, and my services will be sought after and admired!" exclaimed Clara



"A chicken is a chicken," laughed Notto, as he worked his way through the barnyard.

He just doesn't understand, being a rooster and all, thought Clara.

I have worked very hard and have proven myself to be a friend of the farmer. I keep my nest neat and clean, unlike the rest of the coop. I also produce larger more attractive eggs without breaking any.

"I am special," clucked Clara, "and now I am certified by the USDA!"

"That's right, you are special" echoed Ellie the milkmaid. "You have set yourself above the rest and you should teach the others to be just like you, so they too can be USDA approved."

"Gee" thought Clara, "Ellie the milkmaid spoke to me!" Ellie has never spoken to me before. I must be special for Ellie to speak to me.

You see, Ellie was the pride of the farm. She has won awards at each state fair, and had once made a profound speech that contained the following words: "When in troubled hours, be guided by those in power." I've never forgotten that, smiled Clara.

So Clara began strutting around the coop telling the others how they needed to be like her, so they too can be special. After some persistence, she had convinced several others to join her. They all began producing many more eggs than the rest, keeping long hours while the others rested and made messes.

"If you don't become like us you won't matter" whispered Clara to one of the new chicks. "You see" said Clara, "We comply to all the rules and we work harder for the farmer, and he rewards us by getting us USDA approved! Don't you want to be approved, little chick?"

"Oh yes, I want to be special too!" peeped the chick.

"Cock-a-doodle-do!" Crowed Notto the rooster as he roamed the coop looking to find a mate.

"Over here!" fluttered Clara. "There are some special chickens here to choose from, why are you over there?"

"A chicken is a chicken" he squawked.

"No, no" said Clara. "They don't follow the rules, they aren't USDA approved!" But Notto kept on moving.

Poor Clara was upset. She ran through the coop, Bak, Bak Bak, Bak! kicking up dirt and running in



circles. She ran to others, she ran to Ellie, she ran to the farmer. "We're special! We are special! I'm special! I'm USDA approved! We lay more eggs than others, I lay more eggs than others!"



Just as Clara was rounding the corner where the cows were kept, she felt a large hand around her neck and was swiftly swept off the ground. As she tuned her head, she could see Roy the butcher, glaring down at her.

Roy was the town bully and all the farm animals feared him, but Clara knew she was special, and that Ellie would help her, so she called to her.

"Miss Ellie help me! I'm USDA approved!"

"I know" said Ellie, as she walked up and hugged Roy. "Hello Roy, I've missed you" Ellie declared.

What!, thought Clara. It's her boyfriend!

As Roy approached the farmer with Clara in hand, suddenly Clara cried out, "I'm special, I've laid many eggs and have worked long hours for you, and I'm USDA approved!"

"I know" said the farmer, as Roy laid Clara down on the butcher block.

"Don't I matter?" mumbled Clara.

Clara's mumbled cries could not be heard however, through the swishing sound of the falling ax.

In an era where mass layoffs are an everyday occurrence





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and the loyalty of the common man has been exploited, characters like Clara are not rare. In her ambitions to be good and to fulfill the perceived goals of her caretaker, she fell pray to the deceit of the very ones she trusted, and discovered that her extra efforts didn't provide her any privilege in the end.



Some can say that we as locksmiths, also have fallen into this trap. Our quest to rid the industry of those who do not comply with the standards we would wish to have, has caused some of us to become self important, forgetting the true goals needed to achieve such a feat. What Clara found out was that her own belief in the people she had trusted, was being used against her to achieve their goals. In the end, she had no-one to turn to for help since they had all the power.

**A**s Notto the rooster had shown, not everyone is convinced that being certified is the gauge of choice. Some may prefer a job well done, rather than a certificate on the wall. Some may not care either way, as long as the task is accomplished. As unfortunate as it may sound, it is reality, and it is something that seems unavoidable.

As much as we have insisted on a criteria for the preservation of this craft, implementing certifications, testing and licenses, it has not prevented any of the offenses so often referred to in our trade gossip.

Many hardworking locksmiths who have gained certifications as well as licenses, have continued to face the same disparaging forces that were working against them before. Even with such a position, their complaints yield little results. I have been told by one licensing agency that unless they actually catch an unlicensed person doing the work, there is nothing they can do!

We can continue to cry out and beat our chest like Clara, only to realize that no one really cares other than ourselves. It is best to look beyond the negatives and grasp the positives of this craft. Support the efforts to grow yourself educationally, emotionally and professionally, while at the same time being humble. Reach out to those who wish to grow, but begin with fellowship not elitism. **TNL**



# Reed Report

I asked a few months ago who had the oldest shop in America. The answers have been coming in like crazy. To bring everyone up to date, here's the latest.

We reported on Koehlinger Lock & Safe Co., in Ft. Wayne, Indiana, they started in 1913. Then along came American Safe & Lock which also started in 1913. Then we heard from J.R. Shoup Company which started in 1908.

At this time I thought I had a winner when I received a letter from Joseph P. Mangione in Troy, New York. It was founded in 1885. However, my last letter just arrived from Argens Safe & Lock Co. in Seattle Washington, founded in 1880! Can anyone out there beat that? If so, let me know.

I mentioned before that Marc Goldberg might give a new car to the winner. However, Marc has since told me I was out of my mind, so I guess we can forget the car for now. Fear not however, I'll come up with some kind of prize.

**Q.** I really enjoy your "Scattershooting" segment each month, but why don't you tell us where the people mentioned are?

**A.** I do from time to time, but only if I can find them myself. I have reported back to you some ten or twelve findings, but have heard nothing on the others. Here's my latest finding.

Vince Spadafora wrote me and stated that "No, there's no truth to the rumor that I'm doing 10 - 20 years for lewd and lascivious behavior. Though I have to admit if I ever got arrested that would be the way to go."

He goes on to explain, in a more serious vein, that since he left ESP he has been enjoying life to the extreme at his place on Cape Cod, and traveling around the country.

**Q.** Any advice you can give me on impressioning the Hon file cabinet lock?

**A.** Most Hon locks are coded with the codes readily available. I really don't know why you want to impression, but this information might help.

If you have a lock with the 1003M keyway — which most are — and the first biting number is "odd" the second will also be "odd." If the first biting number is even, the second will also be "even."

If the first number is "odd", the third and fourth will be "even." If the first number is "even" the third and fourth will be "odd."



Yours For Better Security,

*Bill Reed*  
Bill Reed

## Scatter Shooting while wondering whatever happened to ... Caroline Reed

The fifth number is always a number one cut.

This information may or may not help you impression the lock, so I say just cut it by code.

**Q.** I was told that a new tool would be needed to open the new Toyota Camry. Is this true or will the old "under the window" style tool still work?

**A.** If you watch the commercials for the new Toyota Camry, you will see that most of them make mention of the fact that the new Camry is "Quieter." This is because one of the leading complaints that Toyota received from owners about the older Camry was about wind noise. As a result, Toyota has tightened and reinforced almost all of the weather seals on the new Camry in an effort to reduce wind noise.

I recently had a 1997 Camry here at the office for three days to work with. During that time everything was disassembled that had anything to do with the locks. The vehicle was opened with an under the window tool, but only with great difficulty. In fact, the tool actually cut the weather-strip.

It was my opinion that the amount of force to get the tool into the door was simply too much. I feel certain that had the same procedure been attempted the same thing in cold weather it would have either broken the window, or destroyed the weather-strip. Since that time, I have spoken with two locksmiths who have already had to pay for repairs caused by forcing an under the window tool past this very tight weather-stripping.

To avoid recommending any methods that I few may do damage to the car, I could not in good conscience recommend the use of an under the window tool. I would recommend you contact your car opening tool supplier to see what alternative methods they offer for this vehicle. **TRN**

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# The WANTED Side

"The Hunt Is On"



by  
**Sara  
Probasco**

**D**eer-hunting season is a big event in our part of the country. Every November, the Chamber of Commerce kicks off the season's opening with a wild-game dinner, free of charge to anyone holding a valid hunting license. Last year, they served over fifteen hundred plates to hunters and their families.

Various stores and shops around town hang out welcome banners and roll out the red carpets, anticipating an increase in sales from the five-thousand plus hunters who will swarm into the area before it's over.

Traffic gets heavier, lines at the grocery stores get slower, and (you guessed it) more people lock up and lose their keys than at most other times of the year.

The kick-off weekend began early for us, last year, with a pre-dawn call from a stranded hunter.

"I hate to bother you at this ungodly hour of the morning, but I've got a real problem," the man said apologetically. "You see, my buddies parked our RV out here at this little air strip, so I could drive it out to the camp and meet them for the opening hunt. Problem is, I just flew my plane here from Houston, and it appears I left my keys to the RV back at the house."

"In Houston?" Don muttered, squinting at the clock.

"Right. Do you think you could come out here and make me a new set? I'd really hate to miss the opening, after coming all this way."

Don took care of that call and a couple others, before the sun was very high that morning. The entire morning was bedlam at the store, with folks getting spare keys made for various hunting cabins, RVs, and miscellaneous vehicles. Our service vans

would scarcely get back to the store before another call would send them out again.

Mid-afternoon was upon us before things finally eased up. Then everything slowed down to Maytag-repairman boredom.

"If it stays like this, would it be all right if I take off early and get a little hunting in, myself?" one of our employees asked. "I'll have my mobil phone along, so you can call if you need me."

"Sure," Don agreed. "Just don't get out of range. You know how quickly things can change, around here."

He had been gone a couple of hours before things got really busy again. In fact, in was right at closing time. The sun was about to set, and traffic was picking up on the highway again when several service calls came in, one right after the other.

Don sent out one service van and was leaving in our personal vehicle to open a car downtown when he decided to call our man on his mobile.

"We could use a little help. There's a lady locked out of her house out your way. Think you can take it for me?"

"Sure. Just give me a few minutes, and I'll be on my way," our man replied.

By the time he arrived at the scene,

it was good dark. He introduced himself to the customer and started to work.

The lady watched for a moment, then glanced over at the service van.

"Young man, there appears to be something on top of your van." The lady stood ramrod straight, pointing across the dark lawn in the direction of the service van.

"Yes, ma'am," our man replied, without looking up.

"Well, what is it? It looks like some sort of large creature."

"Yes, ma'am. It's pretty good size." He continued his work, trying to pick open the front door lock on her house.

"Well?" She obviously wanted an explanation.

"It's a buck," he finally said, shining his flashlight at the van. "I shot him a little while ago." A seven-point buck was unceremoniously draped over the top of the van, his glassy eyes reflecting the light.

**T**he woman gasped and staggered back.

"Don't worry; he's dead."

He turned the knob and opened the lady's front door.

"There you go," he said cheerily. "Sorry I was a bit slow getting over here. I had just shot that deer when your call came in, and I had to gut ... uh, field dress ... him, before I could come."

One of the lady's neighbors signed the ticket for her after they carried her into the house. He assured our man that she fainted a lot, so it was really nothing to worry about.

"I don't guess you told her the joke about the hunter who shot his buddy?" Don chided our man, the following morning.





"No. I started to, but somehow, it didn't seem the thing to do, at the time."

"What joke is that?" I asked, wading smack into the victim's slot, as usual.

The two men glanced sideways at each other with one of those, "Aha, another sucker!" looks. Don broke the silence.

"Aw, it's just an old hunters' joke. Nothing you could relate to."

"Too racy, or what?"

"No, nothing like that. It's a guy sort of thing. I doubt you'd appreciate it."

"Try me," I insisted.

Don smiled. "Well, Joe and Moe were out hunting, and Moe accidentally shot Joe. After Moe dragged Joe to the doctor's office and the doctor had worked over him a while, Moe asked if Joe was going to make it." Don paused to snicker. Then he regained control and continued, his voice breaking slightly.

"The doctor said, 'I think so, but he'd have a lot better chance if you hadn't field dressed him before you brought him in.'"

The men exploded into gales of laughter.

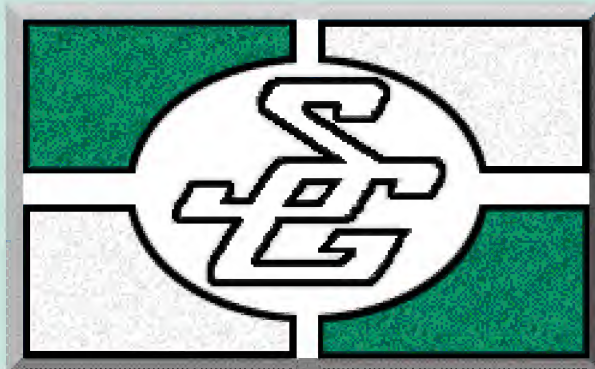
After watching them a few moments, I shook my head and wandered away.

It looked like this was going to be another one of THOSE weeks. **TM**

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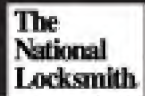
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# FLIGHT OF THE PHOENIX



by Charles Stevenson

**W**e all know the story of the mythical Phoenix which rose up from the ashes and became the symbol for rebirth and rebuilding for several centuries now. This is the story of a modern day Phoenix. Kevin Moores and I were offered the opportunity to relocate and retrofit a safe of over one hundred years of age recently, and we wasted no time in committing to the project.

Since I teach seminars in electronic

safe lock servicing and retrofitting, I felt compelled to not only retrofit this safe, but to write about it as well.

*Photograph 1*, shows the safe in its original state with the Yale 024 mechanical combination lock on it. The owner did not have any knowledge of safes, safe locks, or what could be done in the way of repairs, replacements or retrofits. He had been advised that a replacement safe could be purchased for around \$600.00, but when he shopped he soon discovered that a replacement with comparable storage capacity would cost considerably more (see *Photograph 2*).

Kevin first talked

to the customer who expressed his love of the old safe but stated that they were having trouble at times opening it. He said that an electronic safe lock sounded as though it would be perfect for his needs and asked how soon the work could be completed. Oh, how I love it when a deal comes together.

Kevin and I started the retrofit a couple of days later and in the process of removing the lock, dial and dial ring discovered the reason for the trouble when opening the old safe. The wear on the spline key and keyway was allowing the lock to vary by up to two numbers when dialing. We would soon eliminate this wear problem forever.

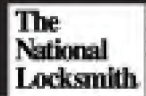
The inspection of the safe revealed that due to the size of the old lock, we could more easily retrofit one of many



**1. An old cast iron fire safe in its original state with the Yale 024 mechanical combination lock on it.**



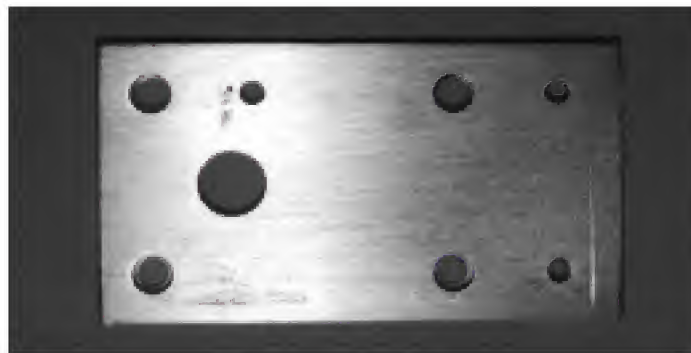
**2. A replacement with comparable storage capacity would cost considerably more than \$600.**



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safe  
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*Continued from page 110*



**3. We could more easily retrofit one of many electronic safe locks by installing a pre-drilled and tapped retrofit plate.**

electronic safe locks by installing a pre-drilled and tapped retrofit plate. Careful measurements proved we could take advantage of a retrofit plate which LockNET (sister company to Lockmasters) makes available to technicians for retrofitting a variety of electronic safe locks onto many modern safes. *Photograph 3*, is of the plate as it comes pre-drilled, counter sunk and tapped for instant use on a McGunn (Domino's) or for welding onto other makes of safes.

The hardest part of this whole project was in choosing which lock to mount on this safe. The Amsec KPL 2000, S&G 6120 series, LaGard ComboGard or the LaGard SafeGard are all proven and dependable retrofit safe locks; each with it's own strong features and benefits. I am teaching certification seminars on ComboGard and SafeGard so I chose

the LaGard SafeGard for selfish reasons.

The task at hand now was to round up all the tools we would need to make this project happen. Electric drill, index of drill bits, 8-32 tap and tap handle, screwdrivers, pliers, diagonal cutters, countersink drill, Loctite, center punch, ruler,

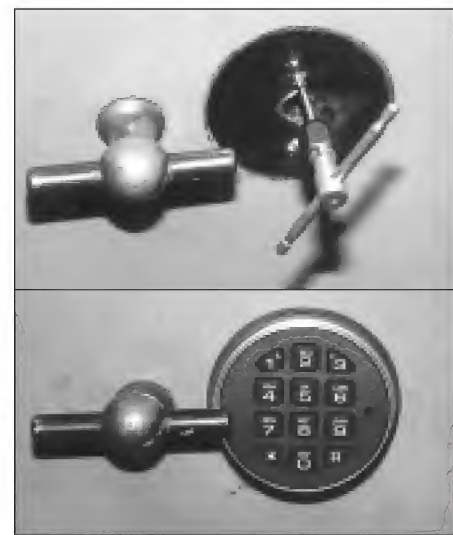
hammer and crimp tool would all be used on this project.

The project really got under way by transferring the measurements from the safe's mounting plate onto the retrofit plate and drilling the holes for the locator pins (horizontal) to fit into and the two holes for the mounting screws (5/16"-18/vertical). *Photograph 4*, shows the area from which the old lock was removed and the cross bar (marked with an X) to be blocked by the safe lock bolt.

I started the actual safe work alone at the customer's site by marking, center punching, drilling and tapping to accommodate the safe's new input pad. Luckily for me this safe was without a hardened door face. The drilling and tapping went easier than anticipated. *Photograph 5*, shows the process of retrofitting the input pad to the outside of the safe. I applied a drop of blue Loctite for insurance to each of the input pad mounting screws.



**4. The area from which the old lock was removed and the cross bar (marked with an X) to be blocked by the safe lock bolt.**



**5. Luckily for me this safe was without a hardened door face. The drilling and tapping went easier than anticipated.**





6. The final step was to secure the cable inside the door by mounting a self adhesive wire tie base to the door.



7. This one hundred plus year old safe had just been fast forwarded into the modern age of electronics.

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The inside of the door retrofitting process went almost as smoothly as the outside. A drop of Loctite on each of the mounting screws and I soon had the retrofit plate secured in place. Mounting the lock itself took all of one minute and I was ready to crimp a new terminal onto the cable feeding from the input pad. Now is when the *almost as smoothly* took over. After crimping on the new terminal and plugging it into the lock, I discovered I had forgotten to bring batteries.

Don't you make this mistake because it can certainly sour your

afternoon. Try to buy two nine volt alkaline batteries at seven different stores, drive a considerable distance and waste over 45 minutes before finding them at a price somewhat competitive to gold: you will understand sour.

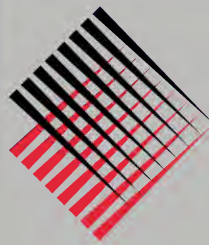
Upon my return I installed the batteries and started to input the factory combination only to find that the input pad was completely dead! No beeps whatsoever! Well, like all good professionals, I immediately wiggled the connectors to the lock and those to the batteries and once again tried,

but to no avail. For the benefit of any novices reading this, the pros call this technique *lock diagnostics*.

I now went about troubleshooting the lock in a deliberate and painstaking manner. I unplugged the cable, inspected the newly crimped terminal and there was the problem; one of the small gold colored pins had bent instead of sliding into the wire. I carefully bent the pin back into position, reapplied the crimper, plugged the cable into the lock once again and tried the combination. SUCCESS!!!!

The final step was to secure the cable inside the door by mounting a self adhesive wire tie base to the door. I now gathered the cable (leaving slack for the input pad to be removed during battery changes) and secured it with a wire tie to the base leaving the inside of the door just as neat and tidy as possible (see Photograph 6).

This one hundred plus year old safe had just been fast forwarded into the modern age of electronics (see Photograph 7). A modern day Phoenix had risen from the ashes to take flight into the next century of dedicated service. **TNL**



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# KEY CODES

## Auth Electric Series H0001-H3000 - Part 1

### HPC 1200CM

Code Card: C26

HPC Cutter: CW-1011

### Framon:

Cuts Start at: .191

Spacing: 125

Block #: 1

### Key Blanks:

Original - H20

Ilco - 1003M

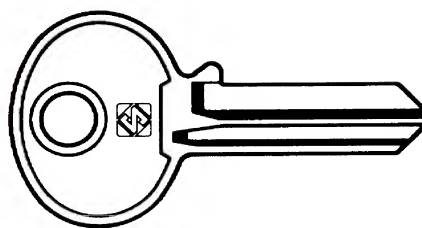
Silca - BOR1R

Curtis - CO106

**Cut to Cut Spacing:** .125

**Number of Cuts:** 5 for operating key.

**Gauged:** Bow to Tip



**CO106**  
(BOR1R)

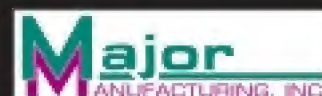
### Spacings:

1.	.191
2.	.316
3.	.441
4.	.566
5.	.691
6.	.816

### Depths:

0.	.290
1.	.272
2.	.254
3.	.236
4.	.218
5.	.200
6.	.182

CODE#	BITTING						
H0001	10105	H0033	02516	H0065	13261	H0098	33641
H0002	30143	H0034	24510	H0066	26154	H0099	32501
H0003	05212	H0035	12561	H0067	01036	H0100	53405
H0004	23650	H0036	24152	H0068	15643	H0101	26314
H0005	52501	H0037	31405	H0069	36161	H0102	41650
H0006	43610	H0038	22152	H0070	23214	H0103	35041
H0007	12163	H0039	10541	H0071	11461	H0104	50303
H0008	63050	H0040	02336	H0072	52165	H0105	21416
H0009	11401	H0041	10501	H0073	04536	H0106	13661
H0010	15243	H0042	25250	H0074	00514	H0107	41612
H0011	16161	H0043	43616	H0075	25052	H0108	20552
H0012	43050	H0044	10145	H0076	33261	H0109	03050
H0013	31661	H0045	11625	H0077	24150	H0110	35463
H0014	53625	H0046	01634	H0078	03610	H0111	26514
H0015	30361	H0047	65636	H0079	40530	H0112	63250
H0016	41252	H0048	15205	H0080	51025	H0113	51261
H0017	51441	H0049	14165	H0081	32165	H0114	21050
H0018	00316	H0049	14165	H0082	24350	H0115	02514
H0019	14361	H0050	35261	H0083	46154	H0116	31463
H0020	04136	H0051	51645	H0084	22516	H0117	64156
H0021	21030	H0052	56365	H0085	42150	H0118	25214
H0022	41416	H0053	23416	H0086	10161	H0119	44316
H0023	14105	H0054	04152	H0087	03416	H0120	53661
H0024	01616	H0055	16341	H0088	20156	H0121	36505
H0025	52341	H0056	55625	H0089	42314	H0122	22156
H0026	43216	H0057	05450	H0090	23610	H0123	10252
H0027	12505	H0058	13025	H0091	14501	H0124	61236
H0028	33025	H0059	16521	H0092	25619	H0125	13461
H0029	01416	H0060	02130	H0093	03634	H0126	14234
H0030	53041	H0061	54365	H0094	23030	H0127	34503
H0031	16561	H0062	35641	H0095	43016	H0128	45452
H0032	32505	H0063	20336	H0096	10561	H0129	62534
		H0064	16301	H0097	41236	H0130	46350



## Auth Electric Series H0001-H3000 - Part 1

H0131	14030	H0160	62130	H0189	02156	H0218	31553
H0132	50105	H0161	30436	H0190	64134	H0219	01230
H0133	62330	H0162	13513	H0191	32636	H0220	61214
H0134	12636	H0163	42402	H0192	51045	H0221	45632
H0135	05250	H0164	10125	H0193	40356	H0222	50236
H0136	55241	H0165	12161	H0194	50230	H0223	46226
H0137	26130	H0166	64026	H0195	32414	H0224	54563
H0138	66152	H0167	32450	H0196	31003	H0225	25630
H0139	25636	H0168	02620	H0197	30236	H0226	13023
H0140	20514	H0169	54161	H0198	54630	H0227	50452
H0141	40350	H0170	03430	H0199	51351	H0228	20536
H0142	05036	H0171	21616	H0200	30456	H0229	12450
H0143	15025	H0172	14141	H0201	24026	H0230	32614
H0144	31263	H0173	30036	H0202	64264	H0231	11535
H0145	33005	H0174	04026	H0203	34030	H0232	34416
H0146	21216	H0175	32361	H0204	36141	H0233	16230
H0147	44512	H0176	25210	H0205	25256	H0234	55153
H0148	45636	H0177	41056	H0206	13315	H0235	04024
H0149	53005	H0178	52525	H0207	20426	H0236	42046
H0150	05610	H0179	16216	H0208	34214	H0237	50252
H0151	64152	H0180	42024	H0209	12165	H0238	62516
H0152	31623	H0181	65056	H0210	01252	H0239	15135
H0153	14636	H0182	11041	H0211	43034	H0240	02424
H0154	23236	H0183	16250	H0212	22136	H0241	54056
H0155	12056	H0184	40226	H0213	34610	H0242	61652
H0156	12610	H0185	05630	H0214	14341	H0243	13243
H0157	21636	H0186	45016	H0215	53023	H0244	05216
H0158	10414	H0187	32030	H0216	24316	H0245	35403
H0159	55405	H0188	51131	H0217	50212	H0246	56236



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H0247	26462	H0294	14214	H0341	50414	H0388	50563
H0248	16103	H0295	51515	H0342	33151	H0389	31205
H0249	63636	H0296	22426	H0343	53513	H0390	34014
H0250	13135	H0297	30321	H0344	35425	H0391	50325
H0251	20262	H0298	21652	H0345	10341	H0392	05410
H0252	50503	H0299	63014	H0346	36210	H0393	56141
H0253	00136	H0300	26512	H0347	52614	H0394	33243
H0254	46132	H0301	56416	H0348	20240	H0395	10452
H0255	66156	H0302	41450	H0349	24646	H0396	32341
H0256	30565	H0303	35131	H0350	30165	H0397	12105
H0257	64626	H0304	40404	H0351	64336	H0398	32561
H0258	54610	H0305	03616	H0352	36234	H0399	51405
H0259	24262	H0306	15461	H0353	54521	H0400	01056
H0260	13425	H0307	04620	H0354	03014	H0401	01450
H0261	42514	H0308	66262	H0355	34125	H0402	46136
H0262	31513	H0309	31643	H0356	04530	H0403	34632
H0263	04350	H0310	32054	H0357	40464	H0404	01414
H0264	10412	H0311	13551	H0358	56412	H0405	05030
H0265	36614	H0312	10565	H0359	22536	H0406	45252
H0266	52030	H0313	36363	H0360	36101	H0407	03216
H0267	62462	H0314	62154	H0361	11353	H0408	24114
H0268	31425	H0315	31551	H0362	50361	H0409	53131
H0269	52052	H0316	56165	H0363	44136	H0410	26404
H0270	56214	H0317	42116	H0364	62350	H0411	52125
H0271	02552	H0318	24462	H0365	54652	H0412	16541
H0272	35151	H0319	36256	H0366	03436	H0413	05652
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H0274	04046	H0321	16325	H0368	36305	H0415	32452
H0275	64240	H0322	63214	H0369	52523	H0416	54034
H0276	51463	H0323	36436	H0370	11241	H0417	52216
H0277	34052	H0324	56252	H0371	62512	H0418	46420
H0278	44024	H0325	12141	H0372	12256	H0419	21056
H0279	62026	H0326	31315	H0373	56450	H0420	15241
H0280	53551	H0327	14303	H0374	02646	H0421	64514
H0281	35153	H0328	65014	H0375	24224	H0422	30032
H0282	02046	H0329	02316	H0376	54305	H0423	51313
H0283	55205	H0330	34252	H0377	65416	H0424	42620
H0284	33265	H0331	26640	H0378	20130	H0425	21452
H0285	66350	H0332	16143	H0379	16256	H0426	26330
H0286	12016	H0333	10301	H0380	50412	H0427	36634
H0287	50163	H0334	42530	H0381	02462	H0428	22404
H0288	34165	H0335	30214	H0382	56341	H0429	25436
H0289	15131	H0336	42426	H0383	13401	H0430	43634
H0290	04462	H0337	62640	H0384	34236	H0431	23050
H0291	16363	H0338	14525	H0385	54212	H0432	35003
H0292	03056	H0339	12501	H0386	46204	H0433	54236
H0293	44310	H0340	04310	H0387	36561	H0434	34303



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H0435	05236	H0498	20464	H0561	12412	H0624	44154
H0436	25014	H0499	62620	H0562	00134	H0625	14230
H0437	40136	H0500	11261	H0563	34230	H0626	04204
H0438	36452	H0501	36414	H0564	43614	H0627	51535
H0439	04044	H0502	02026	H0565	34652	H0628	52256
H0440	21230	H0503	03034	H0566	04040	H0629	46310
H0441	56303	H0504	13045	H0567	31401	H0630	24640
H0442	23450	H0505	65216	H0568	02136	H0631	35021
H0443	25416	H0506	56436	H0569	14254	H0632	54636
H0444	46314	H0507	23410	H0570	32632	H0633	33115
H0445	03630	H0508	15425	H0571	01214	H0634	62312
H0446	41656	H0509	02536	H0572	53461	H0635	62646
H0447	63034	H0510	64046	H0573	04314	H0636	24130
H0448	21252	H0511	05034	H0574	31353	H0637	46202
H0449	40314	H0512	53225	H0575	42462	H0638	55351
H0450	05430	H0513	15663	H0576	16365	H0639	20404
H0451	41052	H0514	23016	H0577	66512	H0640	50430
H0452	23636	H0515	30325	H0578	32436	H0641	16305
H0453	41030	H0516	42336	H0579	56230	H0642	35663
H0454	65252	H0517	12614	H0580	44116	H0643	04116
H0455	32430	H0518	31241	H0581	55025	H0644	10430
H0456	52652	H0519	24536	H0582	04516	H0645	32456
H0457	35353	H0520	20152	H0583	12525	H0646	14121
H0458	64642	H0521	33023	H0584	25414	H0647	53205
H0459	43414	H0522	41214	H0585	04510	H0648	20316
H0460	51023	H0523	12216	H0586	20356	H0649	66130
H0461	10214	H0524	15515	H0587	36525	H0650	34616
H0462	32652	H0525	62426	H0588	62042	H0651	54252
H0463	46620	H0526	51225	H0589	15623	H0652	12361
H0464	45212	H0527	35025	H0590	32014	H0653	31245
H0465	40552	H0528	65414	H0591	22530	H0654	66354
H0466	32410	H0529	53531	H0592	62134	H0655	36630
H0467	04226	H0530	04114	H0593	34056	H0656	52236
H0468	03250	H0531	65436	H0594	04626	H0657	13155
H0469	45616	H0532	12630	H0595	26532	H0658	02240
H0470	51623	H0533	61212	H0596	24314	H0659	62404
H0471	14616	H0534	33241	H0597	54030	H0660	26246
H0472	16450	H0535	12652	H0598	43056	H0661	10363
H0473	36214	H0536	54014	H0599	36252	H0662	33205
H0474	61036	H0537	13153	H0600	21414	H0663	02352
H0475	55425	H0538	42640	H0601	26352	H0664	46536
H0476	25034	H0539	35205	H0602	45610	H0665	36230
H0477	63630	H0540	12036	H0603	55263	H0666	02442
H0478	52414	H0541	50214	H0604	14252	H0667	12305
H0479	20204	H0542	36143	H0605	24530	H0668	14563
H0480	43236	H0543	51241	H0606	35513	H0669	53441
H0481	61254	H0544	16430	H0607	63610	H0670	02510
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H0483	34105	H0546	13043	H0609	40330	H0672	20462
H0484	64114	H0547	53245	H0610	32252	H0673	16361
H0485	02262	H0548	26116	H0611	46264	H0674	30525
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H0493	66316	H0556	33405	H0619	42552	H0682	22130
H0494	40204	H0557	12416	H0620	04264	H0683	34365
H0495	31041	H0558	55623	H0621	15263	H0684	14414
H0496	65212	H0559	30254	H0622	62150	H0685	30216
H0497	52430	H0560	66530	H0623	34636	H0686	26204





## Auth Electric Series

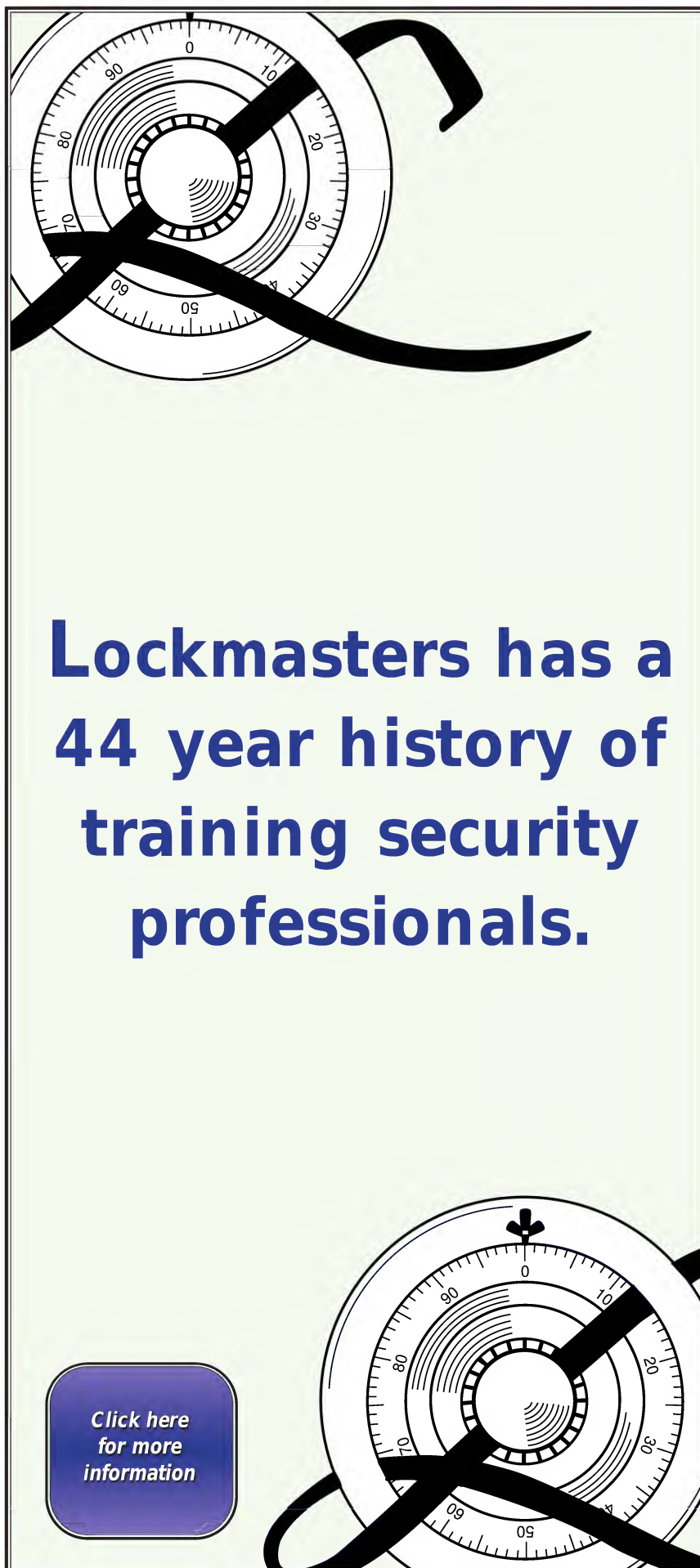
### H0001-H3000 - Part 1

H0687	14305	H0749	53535	H0811	64130	H0873	16436
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H0689	64226	H0751	55641	H0813	43052	H0875	64530
H0690	34341	H0752	44536	H0814	33043	H0876	36236
H0691	02152	H0753	12252	H0815	42316	H0877	32103
H0692	42156	H0754	34436	H0816	65034	H0878	51641
H0693	55315	H0755	52305	H0817	36365	H0879	24552
H0694	14163	H0756	41012	H0818	21036	H0880	32036
H0695	26336	H0757	14036	H0819	52543	H0881	05436
H0696	50145	H0758	13515	H0820	11441	H0882	51003
H0697	11243	H0759	22620	H0821	30145	H0883	16234
H0698	16414	H0760	32525	H0822	23652	H0884	04336
H0699	20446	H0761	45236	H0823	52454	H0885	35245
H0700	34361	H0762	12034	H0824	25230	H0886	52436
H0701	14632	H0763	35315	H0825	12365	H0887	15153
H0702	52103	H0764	43652	H0826	03012	H0888	25452
H0703	11425	H0765	63436	H0827	45410	H0889	12014
H0704	20530	H0766	13403	H0828	35623	H0890	35335
H0705	24024	H0767	01434	H0829	61054	H0891	50256
H0706	05416	H0768	16456	H0830	02530	H0892	20352
H0707	43252	H0769	45414	H0831	10434	H0893	02550
H0708	25430	H0770	24136	H0832	51513	H0894	62024
H0709	54341	H0771	30452	H0833	21032	H0895	23456
H0710	13643	H0772	22646	H0834	14654	H0896	45652
H0711	35225	H0773	50125	H0835	64310	H0897	15441
H0712	02464	H0774	05614	H0836	02314	H0898	54054
H0713	30105	H0775	61012	H0837	50341	H0899	66356
H0714	52563	H0776	13205	H0838	32563	H0900	20330
H0715	56525	H0777	51151	H0839	22512	H0901	13621
H0716	64552	H0778	44246	H0840	45214	H0902	04242
H0717	54503	H0779	36121	H0841	33645	H0903	56363
H0718	01436	H0780	03652	H0842	53153	H0904	11025
H0719	25632	H0781	26646	H0843	02402	H0905	40336
H0720	41256	H0782	61454	H0844	31225	H0906	31531
H0721	54450	H0783	15403	H0845	52361	H0907	62156
H0722	01236	H0784	40514	H0846	12436	H0908	31441
H0723	15225	H0785	50216	H0847	32145	H0909	16323
H0724	50434	H0786	51135	H0848	43452	H0910	36412
H0725	42262	H0787	10236	H0849	01034	H0911	03456
H0726	10543	H0788	54325	H0850	26150	H0912	65612
H0727	52145	H0789	25030	H0851	52036	H0913	04532
H0728	03030	H0790	35265	H0852	02154	H0914	55203
H0729	11663	H0791	04552	H0853	46356	H0915	32610
H0730	30232	H0792	63056	H0854	21410	H0916	51531
H0731	56256	H0793	56232	H0855	31515	H0917	14014
H0732	31351	H0794	10365	H0856	65430	H0918	15661
H0733	26626	H0795	61430	H0857	30212	H0919	32250
H0734	05014	H0796	51203	H0858	55461	H0920	46152
H0735	11645	H0797	26536	H0859	43014	H0921	22352
H0736	32656	H0798	62332	H0860	11335	H0922	30414
H0737	40262	H0799	10234	H0861	51401	H0923	63256
H0738	12543	H0800	51353	H0862	34036	H0924	26114
H0739	21612	H0801	56503	H0863	52325	H0925	14436
H0740	46516	H0802	15261	H0864	04352	H0926	32630
H0741	54125	H0803	26446	H0865	63030	H0927	13151
H0742	65436	H0804	54121	H0866	24426	H0928	04224
H0743	32230	H0805	24310	H0867	12143	H0929	45032
H0744	40156	H0806	05252	H0868	62354	H0930	36650
H0745	25454	H0807	13421	H0869	14612	H0931	42246
H0746	04662	H0808	54143	H0870	55225	H0932	56434
H0747	15421	H0809	20246	H0871	64020	H0933	31511
H0748	04426	H0810	51041	H0872	26534	H0934	31021



H0935	10230
H0936	42534
H0937	23056
H0938	65630
H0939	14256
H0940	46462
H0941	26310
H0942	56452
H0943	15625
H0944	31335
H0945	42662
H0946	62204
H0947	13351
H0948	53003
H0949	34410
H0950	34161
H0951	05412
H0952	53265
H0953	43214
H0954	26530
H0955	14125
H0956	04330
H0957	22316
H0958	53043
H0959	05636
H0960	66264
H0961	55021
H0962	22514
H0963	35313
H0964	41632
H0965	52014
H0966	13021
H0967	64204
H0968	10325
H0969	51205
H0970	14250
H0971	20314
H0972	51315
H0973	53241
H0974	30301
H0975	63632
H0976	15265
H0977	42136
H0978	05254
H0979	35661
H0980	11553
H0981	02424
H0982	40130
H0983	31461
H0984	24626
H0985	64532
H0986	12656
H0987	36341
H0988	04154
H0989	64516
H0990	10454
H0991	44226
H0992	62336
H0993	02420
H0994	42664
H0995	31443
H0996	64624
H0997	16321
H0998	14054
H0999	51553
H1000	04624

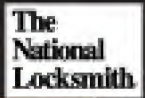
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# The DRILL MASTER

by Dale Libby

## and More!

**Dale Discusses a new metal magnetic template and proposes new nomenclature for positioning and orientation of safe locks.**

I have two ideas to discuss in this article. One is the use of a fine new template made by Mike Oehlert, and the second and most consequential my proposal for a new language when describing safe lock positioning and orientation.

Let us first discuss the template and incorporate MY new terminology for the positioning and logical orientation of safe locks.

The template shown in *Photograph 1*, is called the "Drill Master" which was designed and produced by Mike Oehlert and available through Mark Bates Associates. It is a fine tool designed to give time saving, accurate drill points for most of the locks you will encounter. The Drill Master is made from a solid six inches square

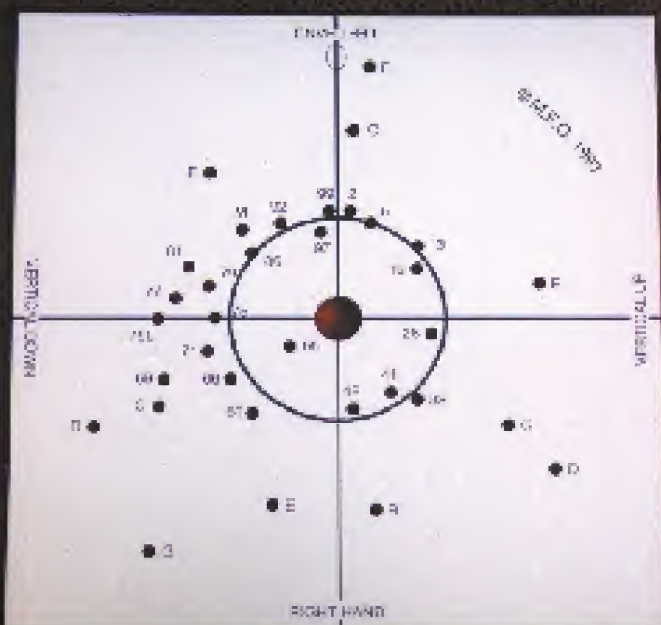
aluminum plate which is about a 1/16" thick. The drill point number and letter references are applied to the template surface by a process called metal photo, which is much more durable than silk screening against scratching, rubbing off or fading. There is also a magnetic backing to adhere to any metal surface (see *Photograph 2*).

The Drill Master offers a number of drill position possibilities for a variety of manufacturers combination locks such as:

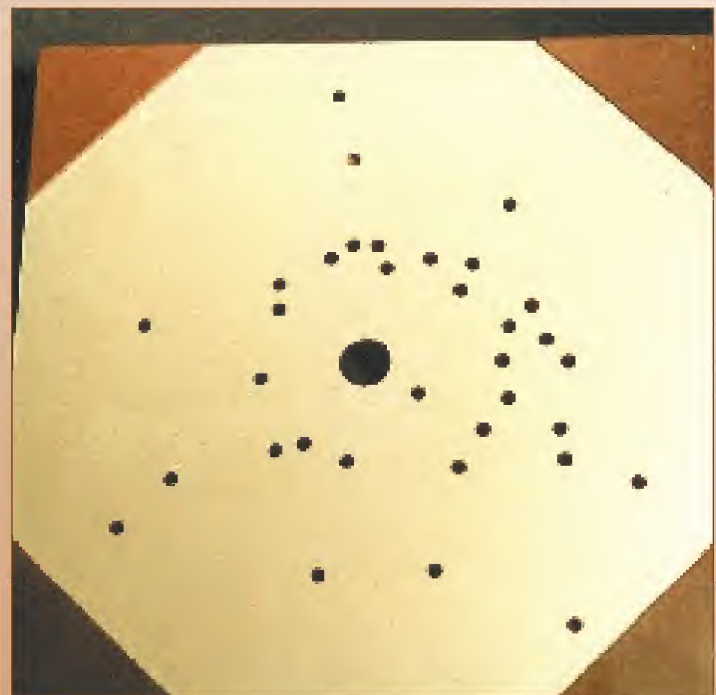
- \*Mosler CD120 and MR120 locks
- \*Johnson Pacific and Meilink tri-bolt round doors
- \*Diebold 177-55 and 180-55M P locks
- \*Gary new style C-79 and E-79

round lift-out doors using LaGard wheel pack

- \*Sentry old style round lift-out doors
- \*Amsec E rate hinged tapered round doors
- \*Mounting screw on S&G and LaGard standard case size locks
- \*Amsec C rate and E rate round lift-out doors with push-in dials 1-1/2" and 9-1/2" diameter doors
- \*Yale OB lock
- \*Relock trigger in S&G 6730, 8400 and 8500 locks
- \*LaGard LAG3460 electronic lock
- \*Mosler CD120 relock trigger
- \*LaGard relock trigger in 1800, 3330 and 2200 locks



1. The Drill Master template.



2. A magnetic backing to adhere to any metal surface.





\*LaGard LAG5010 electronic swingbolt lock

\*Many Import fire safes using a direct entry type locks such as: Sentry, Major, Amsec, Armor, Diplomat, Schwab and others

Lever screw in S&G 6730, 8400 and 8500 locks

\*LaGard LAG2870 electronic motor bolt lock

\*LaGard LAG5010 swingbolt lock

\*LaGard 2800 electronic time delay lock

\*Yale OC5 and OC9 locks

\*Sun OC5 style lock

\*Mosler 1D lock

\*Mosler CD302 and MR302 locks

\*S&G 6720, 6730, 6742, 6770, 8400, and 8500 locks

\*LaGard 1800, 1900MP series locks

\*LaGard 3300 and 2200 key locks

\*Ilco P67 lock

\*Diebold 900, 177-20, 177-23, 177-24 and 180-32 locks

\*Johnson Pacific and Meilink round lift-out tribolt doors

\*Mas-Hamilton X-07 lock

\*S&G examiners hasp

\*Amsec relock devices on the C rate round lift-out doors with push-in dial

\*Diebold relock devices on the 177-55 and 180-55 round doors

\*Amsec relock devices on the E rate hinged tapered round door with push-in dial

\*Gary relock device on the TL-30, 16 inch and taller rectangular doors

\*Knight relock device on the TL-30 16 inch and taller rectangular doors

Remember, the relock trigger is the relocker within the lock case. A relock device is the external relocker which normally blocks the travel of the door locking bolts, or controlling bars preventing their retraction.

At a price of \$69.95, that's quite an impressive list of manufacturers products that can be drilled with one template! The Drill Master shown in *Photograph 3*, is being used to locate and mark the drill point for a LaGard combination lock on a McGunn safe.

All drill point locations on the Drill Master template are designated by

either a number or a letter. A drill point reference sheet including all the drill point possibilities is supplied with the Drill Master template. Each drill point reference is designated a number which corresponds with either a number or letter on the Drill Master.

In the instruction sheet supplied with each Drill Master, the first paragraph reads as follows:

*This drilling template has been designed to be durable, versatile, and easy to use. It can be used on hundreds of different safes, equipped with a*

*variety of mechanical and electronic locks. It is made from 1/16" aluminum plate and can be used for all four hands of locks, RH, LH, VU, and VD simply by rotating the template to the desired handing.*

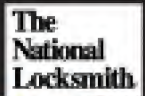
Concerning industry standard handing or lock mounting references, there is a universal concept that I would like to address. The fact is, we will always template a door from the outside of the safe, chest or vault. We do not template a door from the inside, so the terminology for current door or lock handing which is



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**3. The Drill Master being used to locate drill point for a LaGard lock on a McGunn safe.**

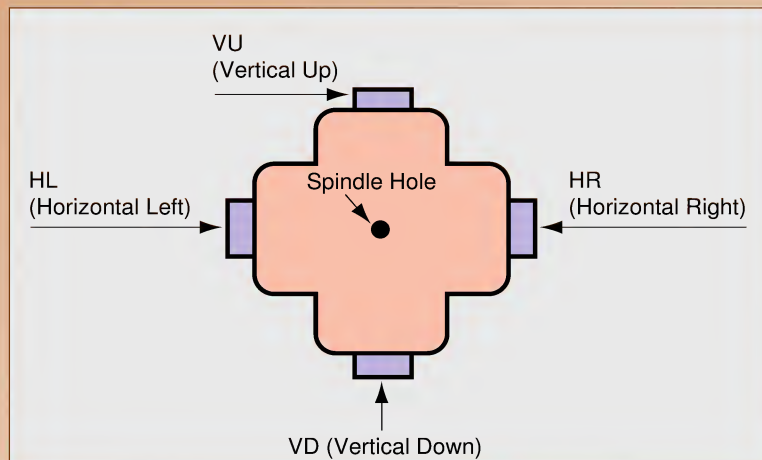


confusion when working on the outside. Thus, for simplicity, ALL template directions given here will be made from the outside of a safe. We do not care what the "HANDING" of the door is, but rather the positioning of the lock.

Handing of safe doors means that a left hand door will have the hinges on the left side of the safe, and a right hand door will have the hinges on the right. This has no bearing on how the combination lock, be it electronic or mechanical, is mounted.

I will NO longer refer to the industry standard for describing the handing of a combination lock — Vertical Up, Vertical Down, Right Hand and Left Hand — for this is a confusing term. I will never use the current terms for lock handing reference again. I will use true lock orientation to make the idea simpler and logical. I propose to keep the terms "Vertical Up (VU)" and "Vertical Down (VD)," for they make perfect sense. I hate the terms "Right Hand (RH)" and "Left Hand (LH)," for they are confusing. I propose to substitute the terms Right Hand and Left Hand with Horizontal Right (HR) and Horizontal Left (HL), which is

**Illustration A. The new combination lock mounting position nomenclature being used.**



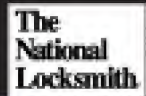
determined from the inside, does nothing but cause

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just reversing the old abbreviations (see *Illustration A*).

This means that the old Right Hand (RH) is now the new and improved Horizontal Left (HL). Likewise, the old Left Hand (LH) is now Horizontal Right (HR). The rules for this is elementary and rudimentary.

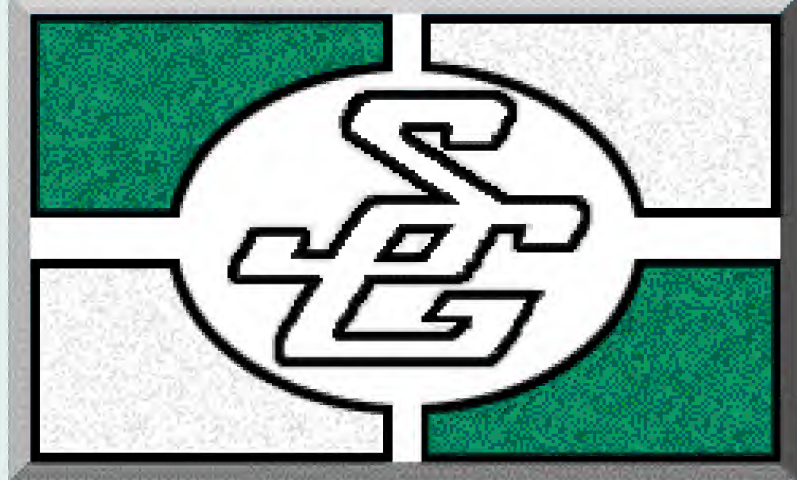
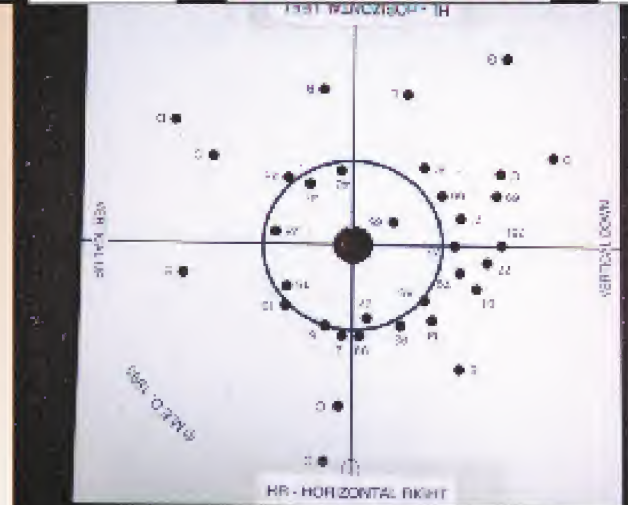
On a Standard Meilink safe, the combination lock is mounted with the bolt facing to the left when viewed from the front of the safe. Remember, we are looking at the outside of the safe and using our safecracker X-ray vision. We could then say with ease and poise that the lock is mounted with the orientation of Horizontal Left (HL). This means that the combination bolt is facing to the left, towards the 9:00 o'clock position.

Likewise, the handle position can also be correctly positioned at 6 inches Horizontal Left (HL) or on a horizontal line 6 inches to the left of the dial. If describing a Gardall or Gary safe, we can say that the lock is Vertical Down (VD) and that the handle is 6 inches Vertical Down (VD). We would all know what this means, so the changeover should be

painless (at least to the locksmiths, the manufacturers will never change their antiquated, outdated, old fashioned and obsolete nomenclature).

The purpose of this change is to make some logical assumptions about lock orientation that will make sense to the old timers and the new crop of safemen

**4. New lock orientation nomenclature I inserted on the Drill Master.**



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that are just learning about opening safes. *Photograph 4*, shows my modified Drill Master template with the new terms Horizontal Left (HL) and Horizontal Right (HR) imprinted on the template in place of Right Hand and Left Hand. I find it much easier and less confusing to use. It just makes sense.

Since this template can be used on electronic locks, I will unveil my new lock orientation reference for them as well, and share with you an easy way of knowing where to drill for the electronic solenoid.

A nice feature of this drill marking template is that it gives you the position of several popular relocking devices which are located outside the lock. It also gives the position of relocking triggers located within the combination lock itself.

Many of the drill locations are given by number which correspond to the dial numbers, all at specific positions and distances from the center of the dial. If one wanted to drill for the end of the fence to view the wheel pack and dial the gates under the fence on a Horizontal Left mounted lock, one would place the

template as shown in either of the pictures, with the name of the orientation facing the bottom of the safe.

Next make a mark at the number 97 on the template with pen or pencil (after removing the dial, of course), then remove the template and drill the opening hole. If the lock is mounted Vertical Down (VD), then that part of the template would be towards the bottom of the door, and you would still use the number 97 location for marking and drilling.

The instructions (except for the use of the handing terms) are easy to understand. There are over 30 positions that can be used for a variety of locks and configurations to place a hole just where you want it.

Now, lets talk about swingbolt locks from LaGard for a moment. These are the most confusing locks to properly orientate from the outside of the safe, until now. I have figured out an easy way to describe them without having to worry too much about the swing involved.



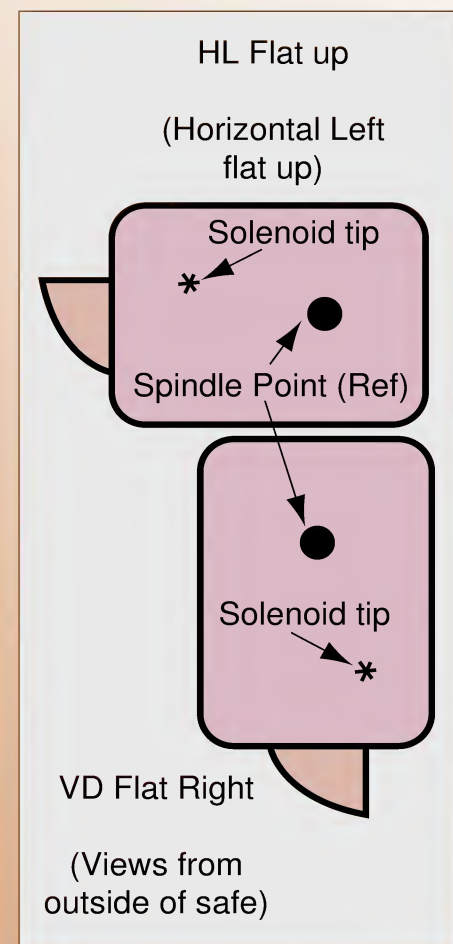
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**Illustration B. Swingbolt flat position examples with solenoid position indicated.**



I will use my NEW orientation nomenclature: Horizontal Left (HL); Horizontal Right (HR); Vertical Up (VU) and Vertical Down (VD) to describe the position of the swingbolt. I will also use the terms Flat Left, Flat Right, Flat Up and Flat Down, to describe the position of the flat portion of the swingbolt. Again, simplicity in itself.

If the lock is installed so the bolt is facing left with the flat portion facing up, the lock is mounted Horizontal Left (HL) Flat Up or (HLFU). If the lock is installed so the bolt is facing down with the flat portion facing right, the lock is mounted Vertical Down (VD) Flat Right or (VDFR) (see *Illustration B*).

The full range of mounting possibilities for such locks is: Vertical Up Flat Left or Flat Right (VUFL or VUFR); Vertical Down Flat Left or Flat Right (VDFL or VDLR); Horizontal Right Flat Up or Flat Down (HRFU or HRFD) and Horizontal Left Flat Up or Flat Down (HLFU or HLFU).

Why should you be concerned about the position of the flat side of the swingbolt? Another simple concept. The lock solenoid on the

swingbolt LaGard locks is in direct line with the flat side of the bolt, no matter what mounting the lock is. If you are going to open an electronic safe with the swingbolt lock orientation of Vertical Down Flat Left (VDFL), you would measure down from the center of the spindle hole 1-1/4" and to the left of the centerline (or towards the flat side of the bolt) 1/4 to 5/16 inches. Drill your hole at that point and retract the solenoid and open the lock. What could be simpler.


I would like some feedback on this. Address your thoughts either to me at: dalelibby@aol.com or directly to

the editor Greg Mango at natllock@aol.com (he just loves receiving vicious mail). The new lock orientation references given, makes so much sense to me that it seems obvious. I will continue to use MY orientation terms in the future. Open, Template, Orientate (without confusion), and Prosper.

*For further information about the Drill Master Template, contact:*


Mark Bates Associates

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## TEST DRIVE!

**T**he Mas-Hamilton X-07 combination lock is a uniquely designed lock, incorporating many features never before seen in a standard sized combination lock. As a part of its unique design, the X-07 is also assembled and installed unlike any other combination lock. One of the unique design features of this lock is the dial.

The dial design is unlike any other. It not only does not feature a numbered dial face, it is attached to the lock in an unusual way. A standard dial consists of a dial and attached spindle. The X-07 dial is just that, a dial. The spindle is separate. To attach the dial to the spindle, a dial hub assembly is used. The dial hub is secured to the spindle with set screws, then the dial is snapped on the dial hub. A snap ring locks the two together. Once the dial is locked on the dial hub, it cannot be removed without great difficulty.

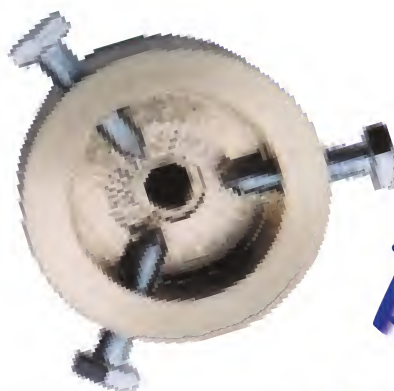
If you should need to remove the dial to drill a malfunctioning lock for example, the standard slam hammer procedure is not recommended. This is where the X-07 Dial Puller produced by Locks Unlimited, Inc., and distributed by MBA Associates comes in.

### PRODUCT:

The X-07 Dial Puller is designed to slowly and uniformly pull the dial off the spindle. There is no slamming action involved to pull the dial which could possibly cause internal lock damage. The design is simple and straight forward requiring no special skills to use.

### COMPONENTS:

The X-07 Dial Puller consists of a: brass puller cup; handle; three cone



## X-07 Dial Puller



point 1/4"-20 cap screws; one 3/8"-24 cap screw with imbedded pin; one 3/8"-24 cap screw with thru hole, and one 1/4" drill bit. Step-by-step instructions are also included. All components of the X-07 Dial Puller are precision made, assuring ease of use for years to come.

### OPERATION:

To use the X-07 dial puller, the brass puller cup is positioned over the knob portion of the dial. It should have a snug fit. The handle is screwed into the side of the puller cup for stabilization.

The three cone point 1/4"-20 cap screws are screwed through the side of the puller cup until snug against the dial. Continue tightening the screws in an alternating manner until the cone point penetrates the dial about 1/8".

Next insert the 3/8" screw with through hole into the rear end of the puller cup until at least 1/2 of the threaded portion of the screw has

been threaded into the cup. This screw is a drill bit guide for the 1/4" drill bit. Chuck the drill bit into a drill and drill into the dial face about 1/16". Do not drill any more than the dial face.

Remove the 3/8" screw with through hole and insert the 3/8" screw with imbedded pin. Hand tighten the screw until the tip of the pin comes into contact with the dial hub assembly. Continue to tighten the 3/8" screw slowly until the dial is removed.

### CONCLUSION:

This is a nicely designed tool that works well. Its very easy to use, and everything except a wrench to tighten the screws and a drill motor is included. The X-07 Dial Puller is a little on the pricey side (\$99.00) but is sure does simplify things.

For more information on the X-07 Dial Puller call MBA Associates at: (606) 887-0496. **TM**

### IN SUMMARY:

**DESCRIPTION:** Mas-Hamilton X-07 dial puller

**PRICE:** \$99.00

### COMMENTS:

Due to the unique design of the Mas-Hamilton X-07 dial, the X-07 Dial Puller will slowly and uniformly pull the dial off the spindle when necessary.

### TEST DRIVE RESULTS:

A nicely designed tool that is a bit on the pricey side, but it does what it is designed to do with little effort or skill required. If you service a number of X-07 locks, this tool will quickly pay for itself.